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The Senses

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Volume 64, Number 2 Spring 2013

Sonoma Medicine

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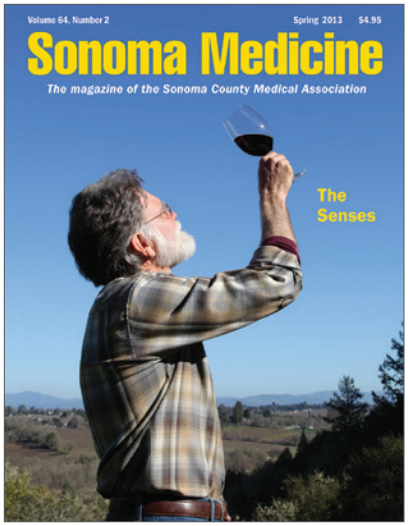

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The Wonders of the Great Horned Owl

James DeVore, MD

This edition of *Sonoma Medicine* explores our five senses. In introducing the senses, I could take a scientific approach and delve into their cruelly complex anatomy and physiology—but I prefer to open with a recent experience.

Early one morning not long ago I went for a solo run up in Annadel State Park. There was barely enough light to discern the silhouettes of the oak trees and the outline of the trail winding up the hillside. It was cold and dead still. The only sound was my breathing and the crunch of leaves under foot—and then a faint, low-pitched "Ho-ho-hoo hoo hoo." Moments later the owl call was loud enough to be unsettling; it was right over my head. Sitting side by side not 20 feet above on an exposed oak limb were two magnificent great horned owls! The three of us stared at each other for a few minutes in absolute silence. I was in awe, but they seemed unimpressed.

This was an amazing experience of the senses: the icy cold air, the crunch of the leaves, the glorious sight and sound of the owls, and yes, the magical silence. But it almost didn't happen. I could just as easily have gone to the gym, jumped on a treadmill with hi-def ESPN in my face and John Fogerty blasting in my earphones and obsessed on my heart-rate monitor.

Dr. DeVore, a Santa Rosa family physician, serves on the SCMA Editorial Board.

And there it is—the editorial opinion in a nutshell. In our modern society, with its mass media, information technology, electronics and smart phones, we are constantly flirting with sensory overload. Sometimes I wonder if our species is ready for the overwhelming barrage of digitized input. Our senses have slowly evolved to give us the gift of experiencing and appreciating life in all its complex glory—but I'm not sure if evolution has prepared us for the techno-revolution. Like most new developments, we need to be careful. With the possible exceptions of Chopin nocturnes, great coffee and the Eastern Sierras, we are usually better off having our senses stimulated in moderation.

For starters, the idea that there must be constant music is crazy. Is this really necessary? Can't we take a drive, walk, nap or shower without the sounds of Justin, Bruno, Alicia or Adele? The notion that we must always be "connected" to everyone in our personal universe is another part of the problem. Is it really that important to be texting, emailing, tweeting and facebooking at every waking moment? Can't we sit quietly for even a few minutes without firing up Angry Birds? And, while I'm on a rant, does the TV need to always be on? Are we afraid that we might miss the "important news of the day," including every gruesome murder, car crash, burning building and convenience store holdup? Our need for constant sensory stimulation has become insatiable—and there's a price we pay.

Maybe you know someone with a few of the following symptoms of sensory overload: irritability, difficulty focusing, sleeplessness, muscle tension, fatigue, headaches, moodiness or angry outbursts. The vast majority of the patients I saw in the office today had some of these symptoms. That no one came in with the chief complaint of "sensory overload" is part of the problem. Sensory overload has become so insidiously ingrained into our lives that we're not really aware of the consequences. Multitasking has taken on such a positive connotation that I sometimes feel guilty if I'm not doing three or four things at once. How many of you sit down, turn on the TV, open your computer to two or three applications, all while keeping your iPhone handy to text your kids and visit with your spouse? Whatever happened to sitting on the front porch and watching the world go by?

As you read the excellent articles in the following pages, you might consider the kind of sensory stimulation that really enhances your life and the kind that is just noise. If you are so inclined, I know where you can experience the stillness of dawn and the crunch of leaves . . . and just maybe you'll be lucky enough to enjoy the wonder of the great horned owl. ◇

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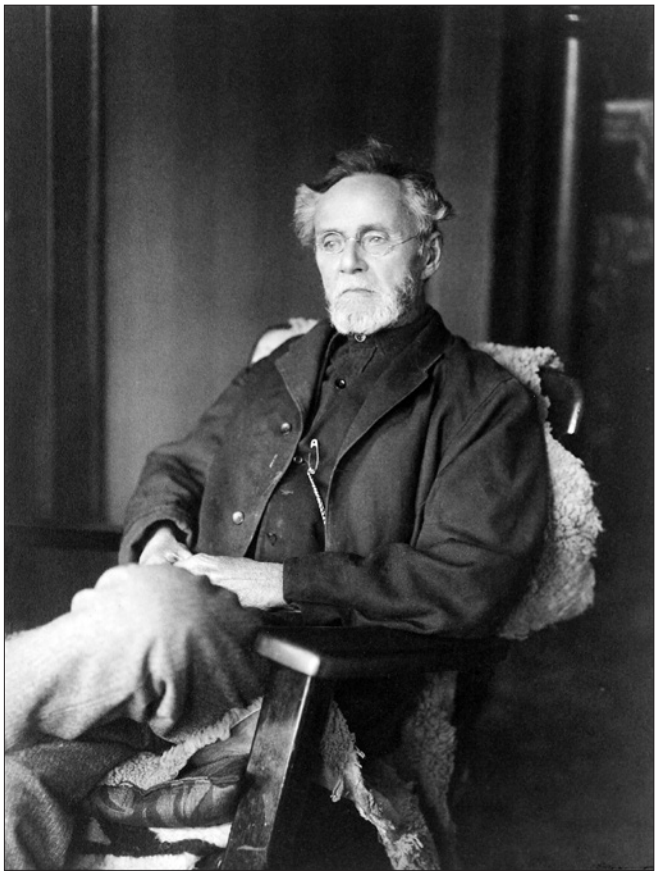
Osteopathic Manipulative Treatment

Steven Levenberg, DO



Dr. Andrew Taylor Still, the father of osteopathic medicine.

Touch—the use of hands in order to sense the cause of disease or dysfunction—is central to the philosophy of osteopathic medicine. While osteopathic practice has evolved and changed over more than a century, the approach began with manual diagnosis and manual treatment at its core.

At the time of osteopathic medicine's inception in the mid-to-late 1800s, medical diagnosis and treatment was in its infancy. There were few effective diagnostic techniques other than history, observation and palpation. Surgery was basic, and sometimes barbaric, and only a few medications were more than blunt or palliative. When Dr. Andrew Taylor Still, a Civil War physician and surgeon, proposed a new paradigm that emphasized touch (palpation) for both diagnosis and treatment, the paradigm simply represented a reasonable complement to a fairly ineffective palate of medical approaches.

Dr. Levenberg is a Rohnert Park family physician and specialist in osteopathic manipulative medicine.

The core tenets of osteopathic medicine have been stated many ways over the years, but they can be summarized as follows:

- Under optimal conditions, our bodies are generally self-regulating and self-healing.
- There is an important interaction between structure and function that, when free of distortion, results in health and, when distorted, results in disease.
- Our role as healers is to promote the harmonious interaction between structure and function; but when there is disease, to finds ways to assist the body in healing itself.

Over the years, we have obviously found many ways other than "promoting harmonious interaction between structure and function" to assist bodies in healing. These newer modalities have been incorporated into both osteopathic and allopathic medicine, making the two approaches ever less distinguishable. In Sonoma County, we are lucky to have DOs and MDs interacting equally and collegially, and our suffix initials are not seen as any kind of important distinction. Nevertheless, application of manual diagnosis and treatment is one of the clearest ways in which DOs differ from MDs.

I would like to focus briefly on osteopathic manipulative treatment (OMT) and what it means in my particular practice. In terms of diagnosis, I have come to heed Osler more and more with each passing year: "Listen to your patient, he is telling you the diagnosis." That dialogue usually leads to palpa-

tion. The mnemonic for the diagnostic criteria of "somatic dysfunction" is TART, which stands for Tissue texture abnormality, Asymmetry, Restriction of motion, and Tenderness. Once found, the somatic dysfunction will need to be treated with one of the many OMT techniques.

While a thorough review of the various osteopathic techniques is well beyond the scope of this article, the more commonly used techniques divide immediately into "direct" and "indirect" methods. Direct techniques involve the input of some force—positional, muscular, or manual—against asymmetry, rotation or resistance in order to correct that dysfunction. If you've cracked your knuckle to relieve stiffness there, you've applied a direct technique to that joint. If you've pulled a stiff joint to a place where it starts to tighten and held it while you try to actuate a muscle to push against that resistance in order to relieve that stiffness, then you've done something similar to a "muscle energy" technique. These are the most common direct techniques.

Indirect techniques are much more subtle and somewhat counterintuitive, and they often require highly refined and sensitive palpatory skills. They also require more time and patience, the primary reasons they are not my most frequently used approach. In an indirect technique, the involved body parts are moved away from their barriers of symmetry and resistance to a place of freedom from resistance. The body parts are held in that position, and free movement is either followed or augmented to achieve resolution of the initial restriction.

Indirect techniques include myofascial release, facilitated positional release, strain/counterstrain and "functional" treatment. Craniosacral treatment is an indirect technique applied to the head and sacrum designed to positively influence cerebrospinal function and relieve craniosacral myofascial tension. Visceral treatment is direct or indirect technique applied to the abdominal internal organs with the intent of freeing fascial restriction in order to improve physiologic function. There are many other variations and subtleties of both direct and indirect techniques.

If you talk with your osteopathic colleagues, you will find that the type of technique they use is often heavily influenced by the osteopathic medical school they attended. There is usually a strong faculty bias at any particular school for one type of technique rather than the other. The bias where I was trained was toward direct techniques, and about three-fourths of my treatment is with this type of technique. By and large, the use of direct techniques has facilitated my ability to incorporate OMT into my daily practice, since direct techniques are generally faster than indirect ones. Regardless of the technique, however, palpation is crucial to make the diagnosis, apply the techniques, and monitor the patient's response. Everything revolves around touch.

In the course of my medical school and postgraduate training, I was exposed to OMT as a practical tool that was almost seamlessly integrated into the course of everyday practice, which is what I continue to do today. Depending on the day, my use of OMT may range from 0% to 25% of what I do, but it is always there as one possible approach, along with all the other modalities.

My primary use of OMT is in the context of musculoskeletal injury or mechanical dysfunction, where I find that the rationale and the result is much more logical. I use osteopathic techniques far less in treating medical illness or in trying to find deranged structural conditions that might result in disease. While finding such conditions has always been an area of interest, it is just beyond my scope as a primary care physician, and way beyond the limitations time imposes on my practice.

Throughout my career, I have found OMT to be an increasingly useful modality. It certainly complements the other approaches I bring to bear for musculoskeletal conditions, and it often allows me to treat something directly that might otherwise require prolonged gradual recuperation or additional physical therapy. The core tenets of osteopathic medicine articulated above have always helped me stay focused in a somewhat more "holistic" way than I might have otherwise. The strong focus on anatomy and the exhortation to "think anatomically" has been crucial to me in grounding diagnosis.

Where OMT fits in terms of prevention is an area of great interest and somewhat uncharted due to the inexact nature of structural diagnosis and the vagaries of predicting the prospective natural course of systemic disease and dysfunction. Dr. Still, the founder of osteopathy, proposed that optimizing structural function would result in an absence of disease and dysfunction, and that impaired structural function was central to the "why" of disease.

More than a century later, we recognize that many factors influence function and can cause disease. Yet it also seems intuitively correct that factors or techniques that might optimize arterial circulation and venous and lymphatic drainage might also serve to minimize the effects of all those other injurious factors. This pursuit is where many osteopathic physicians, particularly those who specialize in OMT, focus their attention.

I hope the above has shed some light on the breadth of what is involved in osteopathic treatment. At its heart is the use of diagnostic touch to find the best way for our patients to get well and stay well. ◇

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Video Games: Sensory Overload or Deprivation?

Brian Prystowsky, MD

Medical lectures always begin with disclaimers, so right off the bat I will say that I am not a gamer. As a pediatrician, I might be expected to say that video games represent "sensory overload" and that they are bad for your children. Colleagues of mine have speculated that video-game overstimulation may contribute to the increase in attention deficit hyperactivity disorder (ADHD). I don't know if there is any data to support causality between video games and ADHD, but at a recent American Academy of Pediatrics conference session on navigating behavioral problems in children, the basic concept of spending time with your kids, affectionately called "special time," was identified as an effective treatment for extinguishing behavioral problems. As a pediatrician who cares for many children with behavioral problems, I am honestly more concerned about sensory deprivation from parental neglect than with sensory overload.

Dr. Prystowsky is a pediatrician at the Vista Family Health Center in Santa Rosa.

When I was a boy, I played video games. Yes, I am confessing to you that I still remember the secret code for a million lives for Nintendo's "Contra." I remember getting so good at Nintendo's "Super Mario Brothers" that I could win every level from start to finish, watch the credits scroll down the screen, and then start over and win the whole thing again! And I distinctly remember beating Mike Tyson for the first time in Nintendo's "Mike Tyson's Punch Out" and staring at the TV stunned at my accomplishment. These are good memories. I also remember pausing Nintendo's "Metroid" for multiple days with the TV off so that I wouldn't lose my place, along with the anger/denial/collective bargaining/depression/acceptance that I felt when my mom turned "Metroid" off, not knowing how she had effectively ruined my third-grade life. My parents are both physicians, and they worked long hours when I was a boy, leaving much time for me to play video games and engage in a variety of other recreational activities of which they were unaware.

The developmental pediatrician lecturing about behavioral problems in children at the American Academy of Pediatrics conference described "special time" as 15–30 minutes of uninterrupted daily, weekly, biweekly or monthly time that a parent could spend with their kid. The "special time" is both predictable and time-limited, and the kid chooses the activity, provided it is reasonable.

In the expert's experience, "special time" was a cure for many of the behavioral problems that have plagued her clientele, and it has allowed many parents to begin enjoying time with their children again. The idea is that the unwanted behavior is fundamentally attention-seeking. Therefore, by paying reliable attention to their children, parents were able to extinguish unwanted behaviors relatively quickly. The behavioral problems that the ex-

pert described were not exclusive to the aforementioned ADHD, but also included hitting, fighting, not listening, being disruptive—basically any way a kid can get into trouble either at home or at school. In my experience, ADHD that meets diagnostic criteria will not completely improve with "special time," since these kids are not necessarily neglected; but it certainly couldn't hurt.

To return to the question of video games, I'll be honest with you in saying that I don't know for sure if they're bad for your children. If you and your child regularly spend time playing video games together as a family, and during that time your child knows that you love them enough to share a common activity of their choice for a defined period of time, I think that might be okay. According to the expert at the conference and the ensuing comments of the pediatric peanut gallery—each with their own testimonial praising "special time" as the new savior for problematic children—I think they might even agree with me.

Now to be fair to both my profession and my internal biases, I do believe there are aspects of video games and television that are fundamentally unhealthy. We as health professionals may use these modalities to zone out after a hard day of work fraught with decision-making and nonstop thinking. We just need a consequence- and stress-free activity to help us laugh after a full day of exposure to illness. But we are not kids. Remember that while our brains are decaying, theirs are still forming synapses and neural connections that will shape their life decisions, including how to properly care for us when we are old.

We want our kids to be active learners and thinkers, and also to be physically active. Video games and television make both adults and kids zone out and get fat. That is why I am not a gamer. You may be like my parents, who used video games and other activities as a babysitter. My point is that my parents and I would have really benefitted from more "special time" together, even if that resulted in playing video games.

Regarding overstimulation, remember how imaginative play and reading books before bedtime stimulate creative thinking, build confidence and bond parents and kids in a way that isn't limited by rules dictated by the video-game manufacturer? Remember how we get vitamin D from the sun, which means that we need to go outside, race our kids to the field before we have a catch or shoot hoops, or teach them how to tend a garden and taste a homegrown tomato? Remember how nice it is to watch our kids play on the beach and create a whole story around a sandcastle and a moat and try to see who can jump over or dive under the most waves? You just can't replicate these examples of overstimulation in a video game. My recommendation is to think about video games as more "sensory deprivation" than "sensory overload" and to set aside some special time with your kids. ◇

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Hearing Loss: Identification and Management

John Jarvis, PhD

The sense of hearing is a precious gift that most of us take for granted. Listening to music, enjoying a conversation in a noisy restaurant, talking on the phone and attending a meeting may be effortless for most, but for a large segment of the population, these activities are difficult and frustrating. To complicate matters, hearing loss is often an insidious, invisible condition, whose effects can be incorrectly attributed to aloofness, confusion and personality changes.

In the United States, hearing loss is the third most commonly reported chronic condition in patients over 65, exceeded only by arthritis and heart disease. More than one-third of all people 75 and older report significant hearing problems.[1] In children, the incidence of profound hearing loss or deafness is 3 per 1,000, and it is estimated that 30 schoolchildren per 1,000 have a hearing loss.[2]

Dr. Jarvis is an audiologist with the Santa Rosa Head & Neck Surgical Group/Northern California Medical Associates.

Types of Hearing Loss

The three types of hearing loss are conductive, sensory-neural and mixed—a combination of conductive and sensory-neural.

Conductive hearing loss results from problems in the external ear canal, tympanic membrane and middle ear, including impacted earwax, eardrum perforation, Eustachian tube congestion, middle ear effusion, traumatic injury to the middle ear bones, and otosclerosis. Most conductive hearing losses, which affect both children and adults, can be successfully treated either medically or surgically by an otolaryngologist. The two primary methods of evaluating a conductive hearing loss are audiometry (comparing air conduction to bone conduction thresholds) and tympanometry (testing the mechanical properties of the eardrum and middle ear).

Sensory-neural hearing loss (SNHL) can affect both children and adults. It occurs most commonly in the microscopic structures of the cochlea, including the stereocilia and hair cells, which are bathed in a fluid that resembles cerebral spinal fluid. SNHL only rarely involves the acoustic or eighth cranial nerve, but any suspected retrocochlear lesion needs to be ruled out. A sensory-neural hearing loss can be congenital or acquired, insidious or traumatic, or it may have an ototoxic etiology. Some SNHLs, especially those with a sudden onset, can be successfully treated with steroids, but most sensory-neural losses are permanent. Some remain stable, others are progressive, and a small percentage lead to total deafness. The most common piece of misinformation given to patients is that there is no treatment for a "nerve loss," when in fact most patients can be significantly helped with hearing aids.[3]

The most significant advance in the identification and treatment of conductive as well as sensory-neural hearing loss is newborn hearing screening. Now implemented in all 50 states, newborn screening mandates early detection and

immediate intervention for all degrees of hearing loss, including mild to moderate and unilateral conductive losses. In years past, these types of hearing losses would have largely gone undetected until primary grade hearing screening. In addition, with the routine use of two objective tests of auditory function—evoked potential or auditory brainstem response (ABR) and otoacoustic emission (OAE) testing—100% of children with suspected hearing loss can be readily identified and treated. With early detection and intervention, the crucial birth-to-3-years-old window necessary for normal speech and language development can be effectively preserved.

Noise-induced SNHL

One of the most common causes of adult SNHL is repeated exposure to loud noise without ear protection, with men having a higher incidence than women. Military, occupational and recreational noise exposure cause significant damage to the delicate stereocilia within the basilar end of the cochlea. Initially, a temporary threshold shift occurs in one or both ears, with or without tinnitus, in which hearing acuity gradually recovers over a period of hours or days. Repeated noise exposure, however, quickly leads to permanent hearing loss, with patients typically unaware of the problem, especially in its early stages and in the absence of tinnitus. Repeated, unprotected loud exposure spares no one, from long-term subway riders to rock musicians.

In addition to incurring bilateral, high-frequency hearing loss, most patients with noise-induced SNHL also develop constant bilateral tinnitus that is untreatable. Most patients describe their tinnitus as a constant, high-pitched ringing, while others have a buzzing, hissing or humming sensation. Current animal studies are focusing on preventing and treating noise-induced SNHL by using a combination of synthetic steroids and anticonvulsants.[4] Medical treatment and/or prevention of noise-induced SNHL in humans continues to be researched, but to date remains elusive.[5]

Although we commonly think of noise-induced SNHL as an adult problem, there is increasing evidence that children suffer permanent, noise-induced SNHL as well. With the ever-increasing use of iPods, video games and cell phones—with receivers close to if not in the external ear canal—the incidence of noise damage in children is increasing. In 2001, a nationwide study of children 6 to 19 found that 12% had noise-induced SNHL in one or both ears.[6] There have been numerous public-service campaigns to educate children and adults about the damaging effects of loud noise, and all makers of these devices now have label warnings and electronic volume control limiting.

Presbycusis

The other most common cause of adult SNHL is aging, or presbycusis. Typically beginning in the sixth decade of life, patients experience a gradual bilateral decrease in high-frequency acuity, along with a general slowing of temporal speech-processing ability. At first, patients have difficulty hearing softer voices or television, and they often ask for conversation to be repeated. As presbycusis advances, patients experience difficulty understanding conversation in everyday situations, especially those with background noise. From the first signs of hearing difficulty, the average patient with presbycusis waits seven years to seek an evaluation.

Untreated presbycusis often results in anxiety, embarrassment and frustration, and eventually to withdrawal. The patient's sense of well-being can be impacted, which in turn affects the patient's quality of life.[7] In a large study by the National Council on Aging, people with untreated hearing loss tended to feel sadness and depression, participated in less social activity, and experienced more emotional turmoil.[8] On the contrary, patients who chose to wear hearing aids reported more confidence, better relationships at home and greater enjoyment of social activities.

Research also indicates a strong relationship between untreated hearing loss and cognitive decline. One study of 687 people, ranging in age from 25 to 103, found that the relationship between sensory function and cognitive ability increased with age.[9] Stated another way, age in itself does not seem to have a significant effect on cognitive function after controlling for sensory-motor function. The researchers cautioned, however, that although a positive correlation exists between sensory and cognitive decline, their data did not support a cause-and-effect relationship. Nevertheless, the take-home message here is that the presence or absence of presbycusis needs to be carefully documented with any patient where cognitive function is of concern.

Identifying and treating SNHL

The most effective way to address SNHL is for primary care providers, including mid-level practitioners, to take an active role in hearing screening by making it a part of routine well-care visits. Screening might be as simple as a patient self-assessment questionnaire or a more standardized test, such as pure-tone audiometry. In either case, patients are much more likely to seek a thorough evaluation and receive effective treatment based on the trust they have in their primary care provider to make the appropriate referral.

Although the vast majority of patients with SNHL can be helped with hearing aids, it is estimated that only 20–25% of SNHL patients in the United States choose to wear them.[10] This statistic has not changed for the past 40 years, despite better technology and stable prices. One obvious obstacle is that hearing aids are not a Medicare benefit, with only a small percentage of Medicare supplement policies covering the cost of a hearing aid. The other major obstacle is the stigma of aging and hearing aids—although this may become less of a factor if the baby boom generation decides to adopt new technology that maintains a good quality of life.

The digital and wireless revolutions have opened many new doors for patients who choose to wear hear-

ing aids. One helpful solution is "frequency compression," in which the hearing aid shifts higher frequency inaudible sounds into lower frequency regions, resulting in improved speech understanding. Multi-channel noise-reduction hearing aids reduce unwanted background noise in narrow frequency regions. Adaptive directional microphones emphasize the speech signal, regardless of its orientation to the hearing-aid user. Another recent breakthrough is the pairing of remote wireless microphones with hearing aids, which allows SNHL patients to hear their spouse, friends or instructors with ample volume without background noise interference up to 30 feet away. Almost all hearing aids today are available with a Bluetooth option, allowing a wireless, noise-free connection with mobile and landline telephones, along with televisions, computers and all tablet devices.

For those pediatric and adult patients with severe to profound hearing loss who cannot benefit from hearing aids, cochlear implantation is a routine procedure that has been refined over the past 30 years and is covered by most insurance companies and Medicare. For patients with single-sided deafness and non-medically treatable conductive or mixed hearing loss, bone-anchored implantation is available as well.

As the medical delivery system evolves with more emphasis on well care, the timely identification and effective treatment of hearing loss will continue to improve at a rapid pace. Primary care providers will provide the keys to this success. It is abundantly clear that advances in treating hearing loss can have a positive impact on patients and their families. ◇

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The Underappreciated Senses

Allan Bernstein, MD

Taste and smell are the underappreciated senses. We can think of taste as five individual receptors on the tongue: salt, sweet, bitter, sour and umami. These are hardwired into our brain as necessary components for survival. Milk is sweet, and babies crave it. Salt is necessary for all our metabolic functions. Bitter is generally a warning that something may be harmful, while sour is both part of our evolutionary diets (e.g., fruits) and also a warning that something may have spoiled. Umami signals a meaty quality and is thought to trigger a response of a meat-like or high-energy food.

Putting these components together enhances what we call flavor. Beer is bitter but also slightly sweet. We often put salt on a piece of fruit to bring out the flavor. Yogurt is acid, often with sugar added, while meat can be grilled with a coating of honey and salt. We clearly adjust our tastes in an effort to create new combinations. Our pets may get the same food day after day, but we have learned to create variety in our diets.

We each have different thresholds for taste, including thresholds for each individual component, so that some people are better tasters for bitter, salt or acid. Asking each person at the table to judge the saltiness of a dish will get you as many responses as attendees.

Smell is more complicated: we are able to identify thousands of different compounds. We smell by inhaling through our nose, "orthonasal," and by exhaling through our nose, "retronasal." The orthonasal sense is a warning (gas leak, smoke, spoiled food) and a way of identifying surroundings such as people, places, flowers and foods. The retronasal sense of smell is to identify what we are eating. It has a different characteristic due to changing temperature and humidity, and the effect of chewing activity and tongue motion on the item in our mouth. The combination of orthonasal and retronasal can be compared to listening to surround sound as opposed to a single speaker.

Dr. Bernstein, a Sebastopol neurologist, serves on the SCMA Editorial Board.

Smell is what gives food flavor. It is combined with taste, "mouth feel" (texture, density) and other sensory inputs such as pepper, alcohol or horseradish to create a comprehensive picture of what we are eating, and how we interpret it. Smell can be learned. We crave the flavor of foods we grew up with and "comfort foods" such as foods we eat at home. After a month in Southeast Asia, I was craving a burrito.

Humans have a limited number of olfactory receptors compared both to other primates and to other mammals with a highly developed sense of smell, such as dogs. We are, however, able to interpret the meanings of taste and smell more effectively than these animals because of our more complex memory systems and language skills. Taste and smell evoke memories, and memories often are attached to a specific taste or smell. If you are looking at a bowl of chicken soup, you can almost smell it and taste it. That juicy sandwich on TV makes your mouth water. There is a complex language built around describing taste and smell, as evidenced by the "flavor wheels" of taste and smell—a series of words used to describe wine and coffee.

The anatomy of taste and smell takes them through the thalamus, the amygdala and into the hippocampus. With several neurodegenerative diseases, the sense of smell is gradually diminished and with it, the enjoyment of food. Smell no longer evokes memories. In both Parkinson's and Alzheimer's, loss of smell is often an early predictor of disease. People with mild, persistent memory loss and loss of sense of smell are considered high risk for Parkinson's or Alzheimer's. Weight loss is often a hallmark of these conditions. In the late stages, these patients often refuse to eat, as there is no enjoyment, only the "chore" of eating.

Spices add flavor, taste and smell, without adding nutrition. Wars have been fought over spices, since it is cheaper to add a spice to a common dish than to create an entirely new dish. We can modify the craving for salt and fat in our diets by more aggressive use of spices. Increasing the spice levels in food for elderly patients may improve their overall nutritional status.

In summary, as our winemakers always note, you taste wine by inhaling, exhaling, swirling it in your mouth and exhaling again. As you wait, the temperature changes in the glass, and the wine changes taste again. If you have too much alcohol on your tongue, you inactivate some of your taste receptors and the wine changes some more.

Salud! ◇

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In Pursuit of a Moving Target

Steve Osborn

A sign outside the gate to Otis Holt's private vineyard and winery says, "Visitors and deliveries welcome. Proselytizers and revenuers please wait here." Nestled in the rolling hills between Graton and Occidental, the 11-acre property has just over two acres suitable for grapes.

Holt makes the most of those two acres, using several elaborate trellis systems of his own devising to grow up to 10 tons of grapes per year, primarily Syrah, but also small quantities of Cabernet Sauvignon, Zinfandel, Pinot Noir, Merlot and Viognier. Although he sells most of the fruit, he uses a portion for his own wines, which are not for sale. He produces about 1,000 bottles per year, just shy of the legal limit for amateur winemakers. Between his many friends and his own family's consumption, the wine tends to disappear.

Born in Tulsa, Oklahoma, in 1951, Holt grew up in McKinleyville, a small coastal community in Humboldt County. He majored in mathematics at Sonoma State but ended up in construction, and lived in a self-built house on wheels for seven years before buying a house and several rental properties in Santa Rosa. He and his wife, Lorin Leith, purchased the vineyard property in 1988 and have been there ever since.

Holt makes his wine in a cellar that measures just 14 by 25 feet. Half of the cellar is given over to 30-gallon French oak barrels filled with Holt's wine, and the other half to a lab area festooned with bottles, beakers and various bits of machinery needed to produce that wine. We sat in this lab on Feb. 13 to conduct the following interview.

How did you first get interested in making and tasting wine?

In about 1975 or 76 we fell in with a group of friends who had enough common interest in wine that it sparked us to do blind wine tastings, the main objective of which was to discover affordable wines that we liked. The wine was poured from bottles wrapped in brown paper bags, so we did not know what they were. I was surprised by the agreement that we found within this group of untrained people who were just basically saying "I like this" or "I don't like this." To me this is still the bottom line of wine. I am perfectly content with that.

If I put a glass of my wine in front of people, either they find it appealing or they don't. To me that is the essence of what matters. All of the other techno babble around the components of the wine and the nuances of this and that . . . it just does not mean that much to me. To me it is really the direct experience that matters. That's what I strive to provide. Wine tasting involves so many of the senses simultaneously that attempts to convey the experience using words have always seemed futile to me.

Where would you put yourself in the ranks of tasters?

I think that I fall somewhere in the middle by virtue of my fairly extensive experience. I have been making wine as an avid amateur winemaker for 33 years. I have become old friends with my own wines and have gotten to know them well, so I probably have a little better sense of what is going on with wines I taste than someone who is new to wine drinking. But I do not have any special talents or skills or a particularly acute sense of taste or smell that sets me apart from just an average person. I do not regard that as a handicap. I like to encourage everyone to trust their own impressions and go for it if they think they might be interested in drinking wine and not be intimidated by all the hoopla.

Could you describe your basic approach to tasting wine? What are the steps?

Mr. Osborn edits Sonoma Medicine.

Otis Holt in his wine cellar. *Photo by Duncan Garrett.*

I usually enjoy one particular wine throughout an evening, perhaps starting to drink the wine a little bit before dinner, through the meal, and a few sips to finish it off. I think that you get interesting signals from the wine by taking a sniff while it has just been sitting in the glass without swirling because the more highly volatile compounds that pop right out of the wine right after it's poured will have filled up the glass. It is important that the glass have plenty of airspace because that is where all the action goes on. Less than a third full is a good way to go.

You will get some initial impressions from sniffing. There may be noticeable volatile acidity, regarded as a defect if excessive, so you may get a little whiff of that when you initially sniff a wine. Some of these compounds quickly blow off when you swirl the glass, so you don't necessarily judge the wine entirely by that first impression, but it is kind of interesting to see what is there. So I would sniff before swirling, then I would swirl the glass. If the wine is a little bit cool, using the palm of your hand as kind of a heating pad while you swirl it and get the temperature up a few degrees, is really going to enhance the volume of aromatic compounds that come out so you can sniff them.

What about the actual tasting?

Tasting wine is kind of a moving target. It depends on a lot of things. Have you been drinking coffee within the last few hours? How warm or cold is the wine? What are the ambient smells around you in the room? Any of these can have an impact on your impression of the wine, so you try to isolate the wine and minimize those extraneous issues as much as possible.

Even when you do put the wine in your mouth, I regard that as just one more step in enhancing the sense of smell or the active smelling of the wine. If you take a little air into your mouth at the same time and you are sloshing the wine around, your tongue is giving you a lot of signals about things like acidity and astringency, bitterness and sweetness. You are processing all of that and you have an impression of whether those things are in balance or whether they are appropriate for the type of wine you are drinking, and whether they enhance the experience. To me, it is really more important what is going on with the sense of smell at that stage because you are warming the stuff and sloshing it around in your mouth. You are supercharging what air you do have in your mouth.

What happens next?

You always hear the words "savor the wine." What I am doing at that point is very gently passing that air in reverse through my nasal passages. For me I find I am more sensitive and able to pick up more things that way. So that's very important.

Even after you have emptied the glass and it has been sitting there for 15 minutes, it is quite remarkable what you

can experience. If you pick that glass up and gently inhale through your nose, even though the glass only has a coating of the wine that you consumed earlier, it is surprising what comes out of that. You get a lot, particularly the treatment that the wine was given with regard to oak—that tends to reside in that mode. Also some hints about how well made the wine is. It should still have a fresh, fruity fragrance.

Just from what little remains in the glass?
I think it has to do with time. It's amazing that just in that film of wine that is coating the glass, there are enough volatile compounds to fill that air up with highly perceptible fragrances and so forth. You are kind of missing out if you don't check that out to really understand that wine.

I notice you have some wines poured here.
Yes, I want you to compare two wines—these two right here.

We have a large glass and a small glass.
That just sort of happened. We should have more big glasses.

The color is very dark.
Put your nose into the glass before swirling it around and just gently inhale. Then try it with the other one because we are comparing these two wines.

So the one in the large glass has much more punch to it.
I get vanilla smells and just a really appealing set of fragrances.

And what would you say about the wine in the smaller glass?
I get a little bit of a sharper smell, not nearly as interesting. There is an almost clinical smell to it. It may be the inside of the glass. I don't know. It's certainly not as opulent. Would you agree?

Yes.
And the color, by the way, it's good to hold the glass up and tilt it toward you and examine the gradation of color from the very thin to the very thick. You said it's very dark, but you were looking down into it. Now when we hold it up and look through it into this light, I think you see it is pretty transparent. It's kind of a ruby color. I don't get any brown colors at all. It is vibrant. To me it is a very beautiful color.

So now you are ready to swirl the wine in the large glass. You are holding it in your hand and warming it.
Yes. Because it is cool in here I am letting the stem of the glass go through my fingers so that I maximize the contact area of my hand. I am swirling it gently, and I can feel the coldness in my hand. That's basically heat being transferred out of my hand into the wine. So the temperature is rapidly increasing. I stop along the way and take a whiff. I am definitely getting different fragrances than before.

I see what you mean. Okay, now we are going to swirl the wine in the small glass.
This may be an example where it might have been better to do it in the opposite order because this is the big one and this is the little guy.

The wine in the small glass does not seem to have much personality to me.
So let's give them a taste. Maybe we should do that in the opposite order. Let's taste the small glass first. It has a little more personality when you put it in your mouth, doesn't it?

How would you describe that taste?
I am getting a sense of some tannic qualities, not a huge amount, but they are very pleasant. The acidity supports the wine and gives it a little backbone, but there are tannins that are nicely balanced. I find it to be a pretty appealing mix. I am generally trying to think in terms of food when I have these wines. This is a wine that is meant to be consumed with food. You have to think a little bit about how your experience would be modified if you were eating and drinking this at the same time, and I think it would be very pleasant.

Let's try the wine in the big glass now. What do you think?

It's much smoother than the one in the small glass.
I agree.

It is quite pleasant, but I don't think I have the vocabulary to describe it.
Do you like it?

Yes.
I love it. To me it is more opulent and softer, and it really is more like a symphony. It has a lot of complicated things that seem to be working really nicely together—the things I feel on my tongue. Nothing really stands out by itself. It's not like, oh, this is really acidic or really tannic or bitter. Everything is working with everything else. This is something that comes with experience.

You can kind of sense the alcohol level in wines. It is generally described in terms of hot or not. If someone says it's hot, they usually mean that it seems to have a lot of alcohol in it, and the alcohol is kind of dominating. And it does do that, it sort of overwhelms. My sense with this is that I am certainly getting the heat, I am feeling the alcohol. It is almost literally a sensation of warmth in my mouth, but it's not to the point where it is interfering with the appreciation of the things that are in the wine.

Now for the obvious question. Which one do you prefer?
I would put my money on the one in the large glass. That's the one I would want to be drinking if I had to choose between the two.

What are we actually drinking here?
What we are actually drinking is wine that came from a single bottle. There is no difference whatsoever between these wines. These are both my 2008 Pinot Noir. I poured the sample into the large glass, which has at least three times the volume of the small glass, about an hour before you arrived. I put

a Petri dish lid on it and just let it sit there and integrate air molecules that were in the glass. There is a lot of air. So there is plenty of oxygen to work with in there. There are a lot of complex things going on as the wine sits there.

When I said I wanted to compare these two wines, I reached over and poured wine into the second glass, which is much smaller to start with, and it didn't have time to open up. When we sniffed it, it was like there was nothing there, especially after having inhaled this big glass full of beautiful stuff that had been accumulating for over an hour. The wine in the small glass did not have the opportunity to interact with oxygen.

Why did you decide to run this particular test?

I did this to illustrate what a moving target wine tasting is. If someone puts a glass of wine in your hand, you don't have enough information. Where did this come from? How long has it been in here? When was it opened? What has it gone through?

Those two wines tasted really different, even though they're the same wine.

Pinot Noir is challenging. I do not have the best place in the world for Pinot Noir, but I do my best with it, and I am pretty happy with the result we were just tasting. These wines, the way that I make them, tend to age nicely. Up to 10 years from now, we will probably still be drinking these.

I don't want to get into too much technical stuff, but there is a concept called redox potential. It is essentially the capacity for a wine to incorporate oxygen in the course of fermentation, processing, being aged, being put in the bottle, and even after it goes into the bottle. The redox potential is the amount of oxygen that the fruit can incorporate before it begins displaying oxidative qualities. Consciously controlling oxygen exposure to enhance the wine without getting too close to this limit is one of the important challenges of wine making. ◇

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Into the Valley of Wolves

Ted Hard, MD

I

July 28, 1834
Through this valley ran a small stream in a northerly direction which all agreed in believing to be a branch of the Yellowstone. . . . Here we found a few Snake Indians comprising six men, seven women, and eight or ten children who were the only inhabitants of this lonely and secluded spot.

Osborne Russell, Journal of a Trapper

October 5, 2012, 5:30 a.m.

We are standing in the dark this early morning, numb and shivering. Overnight the temperature has fallen to eight degrees. Despite knit cap, thick gloves and a heavy parka, I have never been so cold. It has snowed during the night, and peaks of the surrounding Absaroka Mountains glow with a mantle of fresh powder. Stars glitter in the blackened sky as if they were shards of ice.

I am traveling with my son. When we found an unexpected opening in our schedules, we took off for a week, flying into Idaho Falls, then renting a car and driving east into Yellowstone National Park. This morning we are huddled on a small knoll overlooking the Lamar Valley. Almost 180 years have passed since Osborne Russell camped in this remote corner of Yellowstone, yet little has changed. The Snake Indians are gone, but the herds of buffalo, antelope and elk still abound.

Dr. Hard is an emergency physician at Sutter Medical Center of Santa Rosa.

A glint of light glows above the horizon. Hushed voices penetrate the silence. A headlamp flashes. We are accompanied by a select group of "wolfers," people from all walks of life who have traveled to this remote, isolated valley for one purpose: to observe the wolves.

Of the dozen or so participants, all have binoculars or spotting scopes. One carries a 600 mm telephoto lens mounted on a heavy tripod. This morning we are joined by a Japanese film crew working on a television special. Rumor has it they have been traveling in the Tetons for a week and have yet to see a wolf.

As light begins to flood across the valley, the dark shapes of buffalo emerge from the mist. There are hundreds. Scattered herds graze along the valley floor. A group of 50 plunges into the river, spray glistening from their hooves.

To the west is a confluence of streams marking the headwaters of the Lamar River. A dozen antelope stand stiffly upon a hillock. Their gaze is focused toward a line of elk, sprinting for the forest. Something has scared them.

"Wolves!" comes a whisper. Excited murmurs spread through the crowd. Immediately, all scopes swing in the direction of the running elk. The Japanese film crew scrambles for their gear. I scan the area with my binoculars. To the rear of the elk are two unmistakable dog-like animals chasing hard, tongues lolling. Their forms rise and fall beneath the waves of sage.

"Not wolves," a knowing voice proclaims. The speaker is legendary park ranger Rick McIntyre. I am told he has not missed a day of wolf observation in this valley for 10 years. When a wolf coughs, he records it.

A sigh of disappointment rises from the crowd. Two coyotes have spooked the elk. The coyotes grow large here, and from a distance they are easily confused with wolves. But coyotes don't prey on elk, and this morning their pursuit seems largely sport. The pair follow the elk for a quarter mile, then break off, disappearing behind a bend in the river.

Yesterday, a woman from Ohio tells me, she saw three wolves running next to the road. When they crossed in front of her car, she snapped a couple photos with her iPhone. She shows me her pictures. The wolves look close enough to touch.

A group of wolfers braving the cold in Lamar Valley. *Photo by Ted Hard.*

A visitor from Houston shares a video he has taken. The images reveal a large black male and three pups gamboling along the river. The spot is a few hundred yards from where we stand. In the video, the wolves are playful, jumping in and out of the water, nipping at each other's heels. This is the type of encounter I am hoping for, and I wait with camera ready, filled with anticipation.

An hour passes. The sun continues to rise. A line of willows follows the river, shimmering with leaves of gold. There is an alleged den of wolves in the hills above us. Ranger McIntyre tells us that three pups were raised there this spring. Now they travel with the pack. We glass the area frequently, looking for movement, searching for a dash of grey or black. But this morning everything is still.

McIntyre pauses to take a call on his cell phone. He starts for his truck. Abruptly, the group is off. The Japanese film crew pulls up their gear. The spotting scopes are sheathed. The small crowd we have joined is hurrying for the road.

I search out one of the dedicated wolfers. "What's happening?" I shout.

"They found the pack!" he yells back.

We scramble after them, running for our car.

II

During the night, I was wakened by the crunching of bones of a rabbit we had eaten. The wolf was not more than twelve feet from where we were lying and it being moonlight, I saw him clearly.

Thomas Moran, Hayden Yellowstone Expedition, 1871

Due to its unique location between mountain ranges, the Lamar Valley provides a natural shelter for many of Yellowstone's mammals. As the temperatures drop, herds of elk migrate into the area, joining large numbers of buffalo and antelope. During the winter and early spring, the valley holds one of the largest collections of megafauna in North America. To some, it is known as "America's Serengeti," and along with its herbivores come the predators.

In most circumstances, wolves are difficult to find. In Canada, where they commonly live in remote mountain regions, forests of thick timber make them hard to see. Here, they can be observed freely as they travel in packs back and forth across the open meadows. A researcher reported he had counted more wolves during a week in Lamar than an entire month in Alberta.

I have come to this valley following a life-long fascination for wolves. For most of my childhood, they haunted my nightmares. While other children were

afraid of boogeymen, my worst imaginary fears were wolves. The children's symphony "Peter and the Wolf" was popular then, and our family listened to it often. In the last act, the duck gets swallowed by the wolf, and you can hear his muffled quacks from inside the stomach of the beast.

When I was 9 years old, we visited my grandparents in Buffalo, New York. A newspaper reported a wolf had braved the Niagara rapids and was found on an island, trying to cross. The wolf was coming, I thought, and he was coming for me. For years, creaks in the house, a window banging or the door shutting brought me screaming from my sleep. If the wolf swallowed me, I wondered, could I yell loud enough for help?

I was not alone in my concerns. There seems to be an unconscious fear, perhaps imprinted in our collective memories, that wolves are dangerous to human beings. Consider the werewolf, a mythical man-like beast who transforms into a wolf at night. Consider too, the folktales "Little Red Riding Hood" and "Three Little Pigs." These fables are haunted by villainous wolves. In 18th century Europe, a rabid wolf wandering through a village, biting everyone in sight, was a dangerous creature indeed.

Despite such myths, there is little evidence that wolves have been particularly dangerous to humans in North America. Over the past century there have been less than a handful of deaths from wolf attacks. Some of these attackers are rabid wolves, some are half-tame wolf-dog offspring, and some involve wolves who were habituated to humans through casual feedings.

In Yellowstone, rangers tell us, wolves are very afraid of people. Usually they flee or fade out of sight whenever a hiker approaches. Here the lowly buffalo is a much more dangerous animal, providing most of the injuries to tourists, far greater than even grizzly bears.

Hunted and persecuted throughout the West by early settlers, an estimated 100,000 wolves were shot, trapped or poisoned during the past century. Despite the creation of a national park at Yellowstone in 1872, the wolves therein were considered vermin. Along with coyotes and foxes, they could be shot at sight. Rangers tell us that the last two Yellowstone wolves were trapped and killed in 1926. For another 70 years not a single howl reverberated across these mountains. For all practical purposes, the wolf was exterminated from our first national park.

III

We have doomed the wolf not for what it is, but for what we have deliberately and mistakenly perceived it to be . . . the mythological epitome of a savage, ruthless killer, which in reality is no more than a reflex image of ourselves.

Farley Mowat, Never Cry Wolf, *1963*

Since wolves often travel at night, by the morning they may be 10 or 15 miles from where they were last spotted. This morning, the rangers have spread through the Lamar Valley and are communicating by cell phone. One of them has found the pack. We jog to our vehicle, make a U-turn and follow the cars in a procession toward the opposite end of the valley.

During the few days we have been here, I have learned that to find wolves, you look for groups of people with spotting scopes. This cadre of people comes to the Lamar Valley on a yearly basis. Many bring their RVs and spend a week at nearby campsites. Over time they have become a close-knit fraternity who share a great passion for wolves. One woman told me she cried every time she heard them howl.

Since the wolf's reintroduction to Yellowstone, park rangers have decided not to call them human names. Years ago, they discovered when they called bears "Mack" or "Sam," people assumed they were tame and tried to give them food. To avoid this intimacy, the wolves are now identified by numbers assigned to their radio-collars.

Many know the numbers of the wolves and can recognize them on sight: "Yeah, that's Number 152" or "The black, there, that's Number 323." Some even know the various generations and offspring like the branching of a family tree. Typically, the alpha male and alpha female, plus several members of each pack, are radio-collared so they can be easily tracked. Through these observations, some of the wolves of Yellowstone have taken on the mythical qualities of Homerian legend.

Number 21 was a large dominant alpha male who led the Druid Pack for nearly a decade. He was brought in from Canada with the initial shipment of wolves. Under his leadership the Druid Pack grew to 37 animals, and it remains one of the largest packs ever studied in the wild. On occasion he was observed to fend off four or five wolves from a rival pack. He was so big and strong it was said he was never defeated in battle. At nine years, he lived almost twice the lifespan of a normal Yellowstone wolf.

In his senior years, Number 21 often followed the hunt, barking encouragement and surveying his subordinates like a general. When he finally died, he was found resting beneath a strand of aspen, high on a mountain ridge overlooking the valley. It was as if he had gone up there and fallen asleep, the rangers said.

The radio-tracking of a second wolf, female Number 14, illustrates the sensitivities of these creatures and how vulnerable they are to the emotions of love and loss. Number 14 gave birth to three pups in the Soda Butte area. Her mate disappeared one evening and did not return to the den. Without his help gathering food, all of her pups would die. She waited for several days, then abandoned the den and wandered over the next week in an erratic course, traveling some 55 miles before she finally returned. The rangers later learned that her mate had roamed outside the park and been shot. Behavior of this nature had never been recorded in wolves. Was she searching for her mate? Was she grieving his loss?

Eventually, the rangers rescued the family and placed them back in holding

pens so the pups could be safely fed and raised. After their release, Number 14 went on to form a bond with another male and raised several families before she died.

I think about Number 14 as we follow the procession of wolfers. We know our own dogs experience many emotions. Our pets may howl at the death of a beloved master, or sink into a depression, losing weight and refusing food. Why should it be any different with the wolves?

As we come around a bend, we are blocked by a herd of buffalo and must pause until they cross. While we are waiting, my son spots a dark, bear-like form in a clump of trees. We pull off the road and glass the area but cannot find the animal again. Sometimes in thick brush, the color of a buffalo's coat and mantle appear similar to a grizzly, and I tease my son about his apprehension.

Later I learn a hiker and his wife were charged by a bear here in the summer. The man was killed and the woman badly mauled. Despite the cars and the presence of human activity, the area remains wild. It is not a place to wander on foot without bear spray and vigilant company.

The group has moved ahead, and we hurry to catch up. Abruptly, we find them stopped at an overlook. Thirty cars have gathered. By the time we arrive, the wolfers are grouped with a number of tourists and gawkers. Everyone is pointing toward the river.

Grabbing a camera, I leap out of the car. At first I cannot find the wolves. Even with a spotting scope they are a far reach. With the naked eye, they are hardly more than dots. After a couple of searches, I see what the excitement is about.

Running along the opposite bank of the river is a pack of nine wolves. There are two blacks and an assortment of grays. One of the wolves turns and jumps into the water. For a time they stop and rest, then move on. Their movements are relaxed and seemingly friendly. Even when they are separated for only a few minutes, they join each other with a welcome lick or friendly wag of the tail.

Their behavior is unmistakably doglike, and I am reminded of a group of dogs at our local park. Despite their domestication over the last 10,000 years, our pets remain bound by a number of instinctual behaviors. Loyalty, friendship and affection have been preserved in the breeding of our domestic animals, and you can see these traits run strongly in the wolves.

What you don't recognize in these casual encounters is the violence. The Yellowstone wolves are known to have a life span of only four years. The leading cause of wolf mortality is not from chasing elk, or harassing bears, or even diseases such as mange and distemper. The greatest source of injury and death is from territorial disputes with other wolves.

A combination of these behaviors is probably what led to our ancestors' successful association with wolves. When brought up as pups, the wolves become part of the human pack. They incorporate us as alpha leaders in their social hierarchy. For early people, they could assist with a hunt, alert a village about intruders, and defend a family from danger. Such activities are still prized in our domestic dogs today.

IV

We reached the old wolf in time to watch the fierce green fire dying in her eyes. There was something new to me in those eyes . . . something known only to her and the mountains. I was young then and full of trigger-itch, and I thought fewer wolves meant more deer and this would be a hunter's paradise . . . after seeing the green fire die, I sensed that neither the wolf nor the mountain agreed.

Aldo Leopold, Thinking Like a Mountain, *1949*

The elimination of wolves from Yellowstone in 1926 removed a key, apex predator from an evolutionary web of complex interrelationships among many diverse forms of life. Without wolves, the elk population boomed. The explosion of elk during the next 70 years led to overgrazing of riverbed environments. Beaver, dependent upon willow, rapidly declined. Coyotes, archenemies of wolves, began to inhabit the valleys. As the coyote population increased, predation on antelope fawns markedly diminished the antelope numbers. It was as if the treacherous Scar and his hyenas from "The Lion King" had taken over, and the land had descended into a spiral of drought and decay.

Concern over these changes appeared in government research papers in the 1990s, as growing voices from both scientific and lay communities began to push for a return of wolves to Yellowstone. When the National Park Service began to consider reintroducing wolves to the park, considerable debate occurred as to which species of wolf should be returned. The wolves of Isle Royal, Michigan, were proposed then rejected because their primary food source was moose, a species rare in Yellowstone. Scientists eventually chose mountain wolves from Alberta, Canada, as close to the original size and characteristics of the Yellowstone wolf. These animals had a distinct advantage because elk was their primary food source.

In 1995, 14 wolves were trapped in the McKenzie Valley in Alberta and trucked to Yellowstone. The wolves were kept in caged pens for two months and then released in three separate areas of the Lamar Valley. March was chosen as an optimal time: the snow pack was thick, and the elks were calving—favorable conditions for the wolves' hunting.

A year later, 17 more wolves were captured in Canada and brought to Yellowstone. These wolves were reintroduced into three new areas in the Yellowstone Range. No one knew exactly what to expect. The releases were termed "experimental," and everyone held their breath.

Twenty years later, looking back, the releases were far more successful than anyone predicted. The wolves thrived. Packs like the Rose Pack, Mollie's Pack and the Nez Perce Pack grew to sizeable numbers. Some, like the 37-member Druid Pack, gained worldwide recog-

nition. Since then, the population has stabilized at approximately 100 wolves living in the Yellowstone area, divided into about a dozen different packs.

Kills of livestock from wolves wandering outside Yellowstone occurred far less frequently than expected. Instead, the wolves controlled the exploding population of elk and reduced the herds to more acceptable numbers. Streambed environments depleted of willow, aspen and cottonwood from overgrazing returned with remarkable vigor. Likewise, the numbers of beaver, dependent upon these trees for food, increased dramatically.

With the return of wolves, coyotes have been driven from the valleys. Antelope populations have grown to their normal levels. Even red foxes, often killed by coyotes, are seen with increasing frequency. It is as if the return of this apex predator has restored a balance of life that existed in the Yellowstone area for at least a thousand years.

V

If we can only get the camera in place of the gun and have the sportsman sunk somewhat in the naturalist and the lover of wild things, the next generation will see an immense change for the better in the life of our woods and waters.

Theodore Roosevelt, 1905

October 8, 2012, 6 p.m.

It is the last night of our trip. My son and I have returned to the small knoll where we began. The wolfers and spotters are here, including Ranger McIntyre with a telemetry unit. We have seen the packs from a distance over the past three days. I have fly-fished in Slough Creek, and we've taken some wonderful photographs of eagles and foxes.

We are again waiting on the hill between the valley and the wolves' spring den. McIntyre reports the wolves return here each couple of days. But a close encounter with *Canus lupus* has escaped us.

As the sun begins to set, we wait alongside the others with eager anticipation, hoping we will get a last, intimate look at a wolf. The light is fading fast, and it will soon be too dark to photograph. So far this evening, there are no howls, and we are left with the silence of the hills.

McIntyre holds up his H-shaped radio antenna. He turns up the frequency and begins to scan 360 degrees. Straight from the valley below us comes a beep.

The ranger pauses for a moment, then points the antenna west. "It's the big, black, alpha male," he says.

I am close enough to hear the repetitive beep grow louder. The wolf is coming, I think, and he is coming directly for us.

I feel uneasy. In the daytime, with full light, and the protection of our car, everything seems settled and safe. Here, standing in the growing darkness, a primitive shiver rushes up my spine. In a few minutes our visibility will be cut to zero. We humans have poor hearing and a weak sense of smell. As day turns to night, a tidal change of advantage leans toward the wolf.

I remember a fishing guide telling me, "You know, I understand why everyone wants to return these animals, and I understand, too, why the ranchers are so cautious about reintroducing them near their herds. But I have a daughter. She was six years old and in our backyard in West Yellowstone, playing on a swing one evening. I just happened to look out the kitchen window, and I saw a wolf, slinking behind the trees. He was crouching, using the bushes as a barrier, moving stealthily from one clump to the next. I realized to my horror the wolf was stalking my daughter.

"I grabbed a gun and ran outside. The wolf disappeared before I could shoot, but if I had seen him, I would have fired, no questions asked." The guide's voice fell. "God knows what would have happened if I hadn't intervened."

McIntyre holds up his antenna, searching. The repetitive beep is growing louder. "Coming," he whispers. "Getting closer."

I stare into the darkness with growing apprehension. In my mind a huge black form appears, eyes glowing, fangs dripping, a monstrous devil-dog emerging from the abyss. I search through the darkening night with a sense of dread, hoping to see the wolf but afraid of what I might find. If he charges, will I have time to run?

When it is too dark to see, we retreat to our cars with a hastened step. There is nervous chatter and an occasional laugh. I realize I am not alone in my fears. After all these years of civilization, we still have an unconscious sense of vulnerability, a sense of fear from the blackness and the invisible beasts that roam the night. It is a fear that haunted our ancestors, huddled around a campfire, so many thousands of years ago.

More than the photography, and the wildlife, and the sightings, maybe confronting these ancient fears is why we came. ◇

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Transcranial Magnetic Stimulation

Jennifer Beck, MD

Dr. Beck (right) and a model demonstrate TMS setup.

Depression is a severe and debilitating medical illness whose typical symptoms include sadness, depressed mood, loss of interest and enjoyment, feelings of guilt or self-criticism, trouble with concentration, and lack of energy and motivation. These symptoms leave people feeling hopeless and sometimes with thoughts of suicide. About one in five people experience an episode of depression during their lifetime. Many people who suffer from depression do not even seek medical help because of fear of judgment from others, or from the belief that they need to handle it themselves, or even for fear that nothing will help.

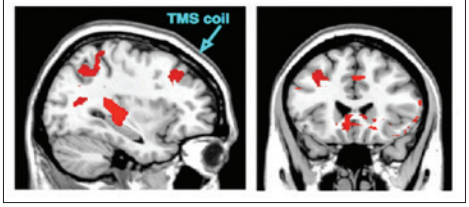
For patients who suffer from depression, physicians typically begin with antidepressants and hope for remission. Unfortunately, many patients are unable to achieve remission on this first round, so the next step is to try another antidepressant or to use combinations of medications. As evidenced by the STAR*D trials—a randomized controlled study with a sequenced treatment algorithm with different medications and medication combinations—the remission rate decreases with each new treatment step.[1] In the STAR*D trials, the remission rates were approximately 37% for the first treatment step, 31% for the second, 14% for the third, and 13% for the fourth. The overall cumulative remission rate was 67%.

As shown by the STAR*D trials, many depressed patients who have tried multiple medications are still not experiencing relief of their symptoms. This situation can be disheartening for both patients and physicians, who can become frustrated with the limited treatment options available. Medications and electro-convulsive therapy (ECT) can have significant side effects and limited benefits. Psychotherapy can be an effective option, but it can be difficult to implement within the current medical system.

With so many people suffering from depression, a need exists for new treatment options. One of these is transcranial magnetic stimulation (TMS), which has been studied in the United States since 1995 and has been available to patients in other countries for many years. The Neuronetics TMS device, approved by the FDA in 2008, uses an MRI-strength (1.5 tesla) ferromagnetic figure-eight coil to deliver focused, time-varying rapid magnetic pulses directed at the prefrontal cortex—the region of the brain most associated with mood regulation.

Faraday's law states that a time-varying magnetic field induces an electric current that runs perpendicular to the time-varying motion of the magnetic field. These currents depolarize neurons and activate nerve cells and are thought to increase brain monoamine turnover, induce neurogenesis genes and normalize the hypothalamic-pituitary-adrenal axis. The currents have also been shown to increase regional cerebral blood flow and glucose metabolism in CNS mood circuitry.[2]

In the pair of functional MRI scans shown below, the image on the left shows an increase in regional blood flow in the prefrontal cortex under the TMS coil. The blood flow is subse-



Dr. Beck, a Santa Rosa psychiatrist, uses TMS therapy in her practice.

quently propagated indirectly through synaptic connections to other areas of the brain, including the cingulate, insula, orbital frontal cortex and amygdala. All of these areas are implicated in the regulation of mood.[3]

TMS and medications have not been studied directly in head-to-head trials. In the pivotal FDA approval trial for TMS therapy, however, 301 medication-free patients who met DSM-IV diagnostic criteria for major depressive disorder without psychotic symptoms, and who had failed multiple trials of medications, were assigned either TMS or sham treatments.[4] Remission rates were higher for TMS than for sham treatments at study endpoints.

With TMS treatments, the most commonly reported side effects are headaches and scalp discomfort during the actual treatment. These side effects are generally mild to moderate, and occur much less frequently after the first week of treatment. The most significant risk associated with the use of TMS is the inadvertent induction of a seizure. The reported incidence is very low, however, and there were no reports of seizures during the Neuronetics TMS studies.[5] Since the Neuronetics TMS device was approved in 2008, more than 10,000 treatments have been administered, and no seizures have been reported.

TMS treatments are administered in an outpatient setting, usually a psychiatry office. The patient sits in a reclining chair similar to a dental chair, and the magnetic coil is placed against the left side of the patient's head. To localize to the prefrontal cortex, the operator first stimulates the motor cortex, specifically the region that initiates thumb movement. Once the operator finds the location that consistently produces thumb movement, he or she moves the magnet 5.5 cm anterior, to direct the stimulation on the prefrontal cortex.

TMS treatment for depression is at high frequency (10Hz), at 120% motor threshold (the strength intensity of the magnetic field needed to induce thumb movement). The patient can listen to music, watch a movie or simply relax while the treatment takes place. An entire course of treatment consists of 30–35 sessions, each of which lasts about 40–50 minutes, over a 6–8 week span. No anesthesia is necessary, and patients are able to function normally while undergoing the course of treatment.

Physicians should consider TMS therapy for patients with major depressive disorder who have not responded to at least one antidepressant medication. Some insurance companies are now covering TMS therapy, but they require at least two trials of different classes of antidepressants; a trial with an augmenting agent such as lithium or an atypical antipsychotic agent; and a course of cognitive behavioral therapy.

Patients with psychotic symptoms or who are acutely at risk for suicide may benefit more from ECT or other treatments than from TMS. Treatment with TMS is contraindicated in patients with implanted metallic devices or non-removable metallic objects in or around the head. TMS should also be used with caution in patients who have an implanted device activated or controlled by physiologic signals, such as pacemakers or implantable cardioverter defibrillators, because the TMS magnetic field could affect their functioning.

Several studies of TMS have been published post FDA approval. The first described the results of TMS therapy in 100 treatment-resistant patients.[6] The average number of failed antidepressants during the current episode was 3.4. About 30% of the patients had previously failed ECT, and 60% had a history of psychiatric hospitalization. Patients were maintained on their current medications while receiving TMS therapy. Their response rate was 50.5%, and they had a 24.7% remission rate. In comparison, in the STAR*D studies, after three failed antidepressants, the remission rate was only 13.7%.[1]

Another study reported results with TMS on 50 patients in a private practice that used a biopsychosocial approach for depression.[7] The number of prior medication failures averaged 6.6. Patients received one of five treatment options, shown here with their remission rates: psychotherapy only (33% remission); medication only (40%); psychotherapy and medication (60%); TMS only (33%); and TMS, psychotherapy and medication (70%). Such results remind us that psychotherapy is a key intervention in treating patients with depression, and that combined therapeutic interventions are often better than individual ones.

TMS continues to be an active area of research. It has been used in neuropsychology to study how the brain organizes language, memory, vision, attention and other functions. Brain imaging and TMS can be combined to establish a causal relationship between regional brain activation and behavior.[8] Low frequency (1Hz) TMS pulsing is inhibitory, meaning researchers can briefly interrupt the activity of a certain part of the brain and see what functions are disrupted. This inhibitory aspect may also be helpful in disorders in which an area of the brain is overactive, such as the cingulated gyrus in obsessive compulsive disorder.

TMS has also been studied in the treatment of bipolar depression, bipolar mania, depression in pregnant and postpartum women, post-traumatic stress disorder, obsessive compulsive disorder, auditory hallucinations in schizophrenia, tinnitus, Parkinson's disease and dystonias, chronic pain and fibromyalgia, and even cigarette smoking. Physicians can treat different areas with different protocols, depending on where the dysfunction is and whether we need to activate or inhibit.

TMS devices are also evolving. The H-shaped Brainsway device recently approved by the FDA is thought to penetrate deeper than standard TMS into different structures of the brain. Standard TMS coils are designed to activate cortical brain regions, up to a depth of about 1.5 cm. When treating depression with a standard TMS system, the limbic system—which is related to mood regulation and is generally deeper than 1.5 cm—is only indirectly

affected through secondary processes. In theory, the Brainsway device enables direct noninvasive activation of deep brain structures.

TMS provides hope for patients and new options for physicians. I have been using TMS with patients since 2010, and I have seen some impressive results. Of my 24 patients who completed a full course of treatment, 66.6% responded and 41.6% achieved remission from their depression. It is truly rewarding to see these patients move on with their lives. ◇

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GUEST COMMENTARY

CAFP Strategic Plan

The 8,000-member California Academy of Family Physicians (CAFP) has set its course for the coming three years with an emphasis on three areas: 1) ensuring an adequate supply of family medicine physicians and other primary care physicians and health professionals to care for the anticipated increase in insured patients when health care reform provisions are fully implemented in 2014; 2) helping family medicine physician practices provide the most effective and efficient care possible through transformation to the Patient Centered Medical Home model of physician-led, team-based collaborative care (this will require ensuring appropriate payment for these enhanced patient services); and 3) supporting the above efforts with appropriate advocacy resources to achieve success.

As it does every three years, CAFP engaged in a strategic planning process based on environmental scans, literature searches, best-practices information, and the expertise of our board members, committee chairs and staff. Our 1.5 day retreat in July 2012 identified desirable goals along 3-, 5- and 10-year timelines; set priorities among those goals in our key areas of workforce, practice transformation and advocacy; and then fleshed out the top five vote-getters in each area for the next three years. Our staff then developed action plans to help us achieve those goals. The board of directors approved the plans late last year, along with the resources to start the process of achieving the goals in 2013.

In the workforce category, we will work to: 1) ensure a family physician is on every medical school admissions committee in the state; 2) ensure every residency director, FP faculty member and FP resident in California is a member of CAFP; 3) identify barriers to happiness/satisfaction of active family physicians and address those barriers to create a happier and more satisfied family physician workforce; and 4) increase interest in family medicine by 15% and ensure that the pipeline is filled with the best and the brightest medical students.

In the practice transformation category, we will; 1) create a virtual Patient Centered Medical Home University to warehouse PCMH information and CME programming about PCMH for our members' use; 2) establish coaching services and resources for family physicians transitioning to the PCMH model; and 3) advocate for payment reform to support transformation, which is a crucial component to adoption of this model of care.

Finally, in advocacy, we will: 1) identify barriers to our members' engagement in advocacy and create a plan to address them; 2) increase contact and engagement of family medicine residency programs in advocacy efforts; and 3) actively engage our membership with CAFP advocacy activities through social media. Ultimately, we see the need to encourage our members to establish and develop advocacy relationships at the local level—local officials become state and often national officials. We must find and sustain a method for increasing contributions to our political action committee, FP PAC, develop a mentor system to nurture colleagues interested in the legislative process, and ensure that every state legislator knows and relies on at least one family physician for legislative input on health issues.

In all likelihood, our goals for family medicine aren't that different from goals of our fellow physicians in other specialties. We welcome the opportunity to work with all through our medical society and specialty societies to improve care for our patients and find practice satisfaction for all physicians. ◇

Managing Your Online Image

John Beilharz, PhD

An estimated 80% of adults in the United States use the Internet, and of these, 72% search the web to find health information. Of the 87% of adults who own cell phones, one-third have used them to look up health information.[1]

Millions of Americans use physician review websites (PRWs), such as Healthgrades and Vitals, to access health information about their providers.[2] In 10 minutes, an Internet user in need of a new physician can easily browse dozens of physician profiles on these PRWs. This ease of access to information has revolutionized the ways in which patients select their doctors and medical services.

Today, prospective patients want a comprehensive and positive online experience with physician practices before they schedule an appointment. The upward trend of Internet and social media usage, combined with the increase of PRWs, makes it essential for physicians and their practices to structure calculated online marketing plans to make great first impressions online.

As Mark Twain observed, "A lie can travel halfway around the world while the truth is putting on its shoes." The Internet has been affecting reputations since its beginning, and the impact it has on society continues to grow as more people use the web in their everyday lives. Product reviews are ubiquitous and have become essential components of online marketing for retailers large and small.

Auction sites like eBay, where the customer is inevitably dealing with an unknown seller, could not survive without a way to establish a basic level of trust. To that end, buyer and seller ratings indicate user reputations in order to minimize bad deals and fraud. Compare these ratings to physician ratings on PRWs and you start to get an idea of how the Internet changes the ways in which patients search for new doctors.

Online reviews form a collection of consumer experiences that shape the opinions of prospective customers. According to a 2011 study by the Harvard Business School, businesses received an average 5–9% percent increase in revenues when their ratings increased by one star on Yelp.com, a popular consumer review website.[3] Quality of service aside, unsatisfied customers can be found in all industries, and their negative reviews can and will harm profits.

Less than 10 years ago, news of a patient's negative experience with his or her doctor would generally travel no farther than close family and friends. Contrast this with today's Internet word-of-mouth, where it takes no more than two or three minutes for a frustrated patient to anonymously share a damaging review of his or her doctor on PRWs.

Unhappy patients with a basic understanding of computers are prone to leave negative reviews, and some are using PRWs to make serious and repetitive attacks on provider reputations and competency. As a result, many physicians feel personally under attack by these patients, and claim that the comments negatively impact them emotionally and financially.

Before anything else, physician clients at our communications company generally want to know if it's possible to simply erase their negative comments and evaluations. While there are some exceptions, reviews posted by patients will stay somewhere online indefinitely. Unless the reviews are fraudulent, malicious and/or deemed inappropriate by a website administrator, they will remain out there for prospective patients to see. With that said, physicians needn't be alarmed or overly upset if they come across negative reviews about themselves online. Even the best, most-loved doctors can't expect to please everyone.

The first step toward managing your online reputation is developing a protocol in your practice for how to react to negative responses from patients. In some cases, non-response is the best way to react. If you do opt to respond,

Mr. Beilharz owns JB Communications, a Santa Rosa marketing, advertising and public relations firm with diverse medical clientele.

it's important to do so in a non-defensive, respectful way. Avoid sounding upset, guilty or like you're deflecting blame. Getting into an argument with a patient on a public online forum will only harm your cause, and should be avoided at all cost. You should always make sure that you present yourself professionally. Let people know that you want all your patients to have positive experiences under your care, and that you are sorry the reviewer was unhappy with your services.

If you or your staff identifies an unhappy patient in the office or over the phone, give the patient a private way to vent his or her frustrations to you. Showing that you care enough to listen to patient complaints and concerns can sometimes be enough to turn an unhappy visit into a positive experience, and enough to keep patients from airing their complaints online.

The good news is that it's just as easy for patients to leave positive reviews online as it is for them to leave negative ones, and when it comes to getting more positive reviews, you have more power than you may think. Grateful patients typically welcome the chance to promote their healthcare providers, especially when they learn that it takes only a few minutes. You and your staff members can actively inform happy patients of the opportunity to share their positive experiences online, and provide them with simple instructions on how to do so.

For best results, patients who advocate for your practice should be informed of their opportunity to post online reviews the same day of their visit, or shortly thereafter. Let them know there's no obligation, but that their doctor always appreciates feedback. Your practice should have cards or flyers on hand that provide direct links to online profiles, making the review process convenient and easy for patients. Links can also be included on your practice's website.

It's effectively impossible to get rid of bad press that leaks out onto the Internet. Web users, however, rarely check results beyond the first page, since what they are looking for tends to appear in the top five or six results. By promoting your online image with positive content about your practice, it is possible and highly effective to use search engines to your advantage. Undesired links can be buried under information that describes your practice in favorable terms, ensuring that negative search results don't show up until the second or third page.

When used properly, the Internet can become your best resource for reaching new patients. Website design and search engine optimization (SEO) is where reputation management begins. Your practice's website should serve as the hub for all your online activities, and it should be designed with your specific clientele in mind. With user-friendly navigation, patients should have no trouble finding links to your Twitter feed, LinkedIn profile, YouTube videos, blog and Facebook page directly from your website's homepage. Finally, custom content should highlight what you want your patients and potential customers to know about you and the services your practice provides.

At our company, we have discovered through Google Analytics reporting that a significant portion of website traffic comes from Internet users viewing patient testimonial sections on our clients' websites. These testimonials provide a great tool to share heartwarming stories of positive relationships between doctors and their patients.

Additional tools we have used to manage our clients' online reputations include creating blogs populated with fresh content, managing social network profiles, distributing digital press releases, and making frequent updates to clients' websites. This strategy increases the probability that patients will have a positive first impression of your practice, while also bringing you higher rankings on search engines and burying potential negative reviews.

It is imperative when developing a solid reputation or brand image that all information about you and your practice is correct and consistent throughout the Internet. Information on sites such as Healthgrades, Vitals and hospital affiliation websites needs to be updated regularly.

Remember that you can use the Internet to your advantage. When used effectively, the web can be much less expensive than traditional advertising. I believe it is crucial for physicians to devote at least a portion of their marketing dollars to online marketing. ◇

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A Tradition of Adventure

Carol Benfell

Dressed casually in slacks and a sweater, seeing patients in her busy Sebastopol practice, Dr. Misty Zelk doesn't look like a soldier. But this double board certified internist and pediatrician spends her time outside the office on the battlefield in Iraq, in an Inupiat village north of the Arctic Circle, or in tumultuous Latin America, tending to illness and saving lives as a medical officer and Lieutenant Colonel with the Arkansas Air National Guard.

Zelk has spent almost 20 years in the military, involved in or training for the worst kinds of crises. She was there, helping survivors in the aftermath of Hurricane Katrina, and earlier this year trained in a scenario that imagined the city of Detroit, ravaged by an earthquake with a crazed killer on the loose. In 2005, her outstanding efforts to save the life of an Iraqi child were documented on Fox TV.

"It hasn't been an ordinary life," Zelk said.

How did you become involved with the military?

My father was in the Navy, and several members of my extended family had military careers. I was always very comfortable with the military lifestyle, and I always thought I would join at some point.

I took ROTC classes in college and had a great time, to the point ROTC offered me a four-year scholarship to pay for my college education. I passed their screening, and all I had to do was sign, but they required a commitment to active duty immediately after graduation. I realized I might want to go and get a master's degree or go on to medical school. If I took the ROTC scholarship, I wouldn't be able to make that choice because there would be a delay.

So I turned down the scholarship, and worked two or three jobs at a time to get through school. My parents sold the occasional calf when necessary to help me make a payment. I played softball, and I had a sports scholarship. I had an academic scholarship as well. I didn't owe a dime when I finished college.

Recruiters are always buzzing around medical schools because they like doctors in the military. When they approached me, I realized I was far enough along that they couldn't derail my career. I could also decide how long I wanted to serve. I've stayed for seventeen and a half years, so that's worked out.

What about Iraq?

In September 1995, I enlisted as a medical officer in the Arkansas Army National Guard, which committed me to one weekend a month and two weeks a year. For a long time, nothing much happened. We weren't fighting anybody. Desert Storm was over quickly. It was quiet.

Then 9/11 occurred and the 39th Infantry Brigade, the main unit in the Arkansas National Guard, was tasked for deployment in Iraq. We divided up all the physician positions, so we could each cover different parts of that deployment. I was there for 120 days, beginning in December 2004 and returning in May 2005.

The way it works is one doctor is assigned to a battalion, usually with a physician's assistant and some medics—the people the army has trained pretty much to the level of paramedics. I was the only female in my battalion, and the only doctor.

We were on a base that had some security—some walls and barbed wire. The medics carry rifles and go out on patrol with the infantry. I carried a 9 mm pistol. I didn't go out on patrol, but I did go out in the field—it's called "crossing the wire"—when one of my guys was injured. When you get a call, you jump in a vehicle and drive out to the scene, wherever it is, pick up your person, and take them to the hospital or whatever level of care they need next. We are the ambulance, the sick call—whatever medical care is needed.

Weren't you scared?

The first couple days in Iraq, I was petrified. There is this constant noise. There is gunfire, there are explosions and mortars—something is going on all the time. You hear it all night, you hear it during the day. It's very disconcerting.

After a couple days, you get some familiarity with what you're hearing. You know that is gunfire from that weapon or that is a mortar x miles away, but you have to get it into your brain: I cannot live every second afraid to die. I have to do my job. You get to the point where you say, I'll do the best I can, and if something happens, it happens. If they kill me, they kill me. You can't think about it and worry about it or it will paralyze you.

On the other hand, there were times when I was out in Baghdad itself. It was a lot different than what I expected. Baghdad is a fascinating city—its archi-

Ms. Benfell is a freelance journalist based in Graton.

tecture and its culture. It was greener than I thought it would be. It was beautiful—the parts that weren't destroyed. I took pictures of everything.

Where else have you been?

I came home in May 2005, and two months later, Hurricane Katrina hit. The National Guard asked for volunteers, but I'd just gotten home. I didn't volunteer, but then I was told to go. My Thanksgiving was spent doing clean-up duty at Port Sulphur, Louisiana.

My brigade was part of a joint task force mission with the Arkansas Air National Guard 188th Fighter Wing. I thought they were humorous. They didn't understand the Army way of doing things. They bought supplies at Wal-Mart and proceeded to decorate their tent. They set up a Welfare and Morale tent, where they played guitars and cards.

One of their officers commented on how I was still a Major. He said I would be a Lieutenant Colonel if I crossed over to the Air Force. That sounded great. The 188th had a nice camaraderie. They really took care of each other, and I'd never seen a commanding officer treat people as well as theirs did.

I was coming up on time to deploy back to Iraq, but I talked to their recruiter and got everything in order. I transferred over to the Air National Guard in March 2006. Since then, my deployments have been voluntary.

In 2009, I was the chief physician for a medical exercise in Guatemala. It was my first time in the lead, selecting sites, coordinating supplies and organizing personnel. We visited four small towns in the mountains, providing primary care, dental services and optometry. Those were long hours—we provided services to almost 1,000 people per day.

In 2010, the Air Force Reserve needed one more pediatrician for Operation Arctic Circle, and I jumped at the chance. The operation is a yearly mission, where different branches of the military organize and lead medical trips to Alaska and provide medical services to the native population

That year, the Air Force Reserve took primary care, dentists and a GI team. I spent three weeks as the lead physician in Kotzebue, providing inpatient care and organizing the physicians who were doing the clinical care. I learned about the culture, and about the genetics at play in some common illnesses that I would not have suspected. The population has a high amount of colon cancer, and there's a lot of asthma and allergies.

Dr. Zelk in Iraq in 2005.

When did you decide to be a doctor?

I had an excellent English teacher in high school and was inspired to take that path in college. I spent my first year taking English classes and communications. Then I took a class in anatomy and physiology, and I fell in love with it. I learned about the inner workings of the body, the different cell types and tissues, how the body functioned. It opened up a new world to me.

I switched to a BS in biology, and did it in three years. One of my instructors suggested I go into medicine, but I just laughed. I said, I'm the first person in my family to earn a college degree. My family are farmers. They're military orfactory workers. The fact that I'm even in college is an accomplishment. People who become doctors come from professional families with other doctors. I'm not that person.

My instructor expressed his faith in my ability, so I acquiesced and applied to the University of Arkansas Medical School. I didn't get in. That reinforced my feeling that people like me didn't become doctors. He sat me down and said that lots of people have to apply more than once.

I figured I would go after a master's degree and teach anatomy and physiology. I was already a lab instructor with the local university, teaching nursing students. I enjoyed it, but I went ahead and applied for medical school one last time.

A letter came saying I had been put on the waiting list again. Then a second letter came, but rather than a number it said I'd been accepted. So off I went to medical school. I didn't feel like I fit the mold, and I didn't think it was realistic, but off I went.

Why did you come to Sebastopol? Why Palm Drive Hospital?

I stayed in Arkansas after medical school because that's where my parents and extended family live. After all those childhood years of moving around, I thought I wanted to stay in one place, and the most natural place was close to family. I ran my own clinic in Little Rock for several years.

After a while, I found that, culturally, Arkansas and I were not the best fit. I had issues with trying to raise my daughter there, and being a minority when it came to my beliefs and interactions.

I attended a pediatrics conference in Napa in 2010, and played hooky one day. My partner and I took a rental car and did some wine tasting. Then we went over and drove the entire length of Sonoma County.

We were dressed comfortably and

having a good time, exploring and interacting with folks. What struck us was that people assumed we lived here, and that we were local. There was just a comfort level and a fit with the community. It felt like home, and we realized we did not have that kind of attachment to Arkansas.

I applied for my California license and started looking for a place where I could practice. I wanted a small hospital where there would be a need for a pediatrician and an internist, and we liked living in the country. West County had it all.

I called Palm Drive Hospital, and they were interested right away. I had other job offers, so I certainly had my options, but I knew how I wanted to practice, and I knew Palm Drive would be a perfect fit.

Since I moved here two years ago, there have been changes. Palm Drive has entered into an alliance with Marin General. The clinic where I work has transitioned to Prima Medical Group. It's a strong partnership that has been beneficial for us. Palm Drive is growing, and I am thrilled to be a part of its future.

It sounds like you're really busy. Why do you stay with the military?
It's a family tradition, it's an adventure, and I like to travel.

I also like the challenge. There was a situation in Iraq just before I left, when an 18-month-old child with pneumonia was brought into my clinic.

Here was this child, who was dying, and all I had was adult equipment. How could I give him the correct doses of medication? How could I give him respiratory treatment? It was satisfying and challenging to figure out how to make things work, and know that now he is alive and well. If I can do it in a war zone, I can figure out anything I need to do at Palm Drive or in my clinic, because no other situation is that austere. ◇

Email: 123carolb@gmail.com

CLASSIFIEDS

Family physicians needed
Family medicine positions available with Annadel Medical Group in Sonoma County. Contact James.DeVore@stjoe.org.

For sale: Office equipment & furnishings
- Exam table w/5 drawers, $100
- Kenmore refrigerator, 60", good condition, $150
- Silk ficus tree, 7', $50 (originally $150)
- Child's room pictures, 24x36" $20; 24x30" $15

Call Lori at 707-579-1400; pictures on Craigslist under North Bay/furniture by owner.

For sale: Urodynamic monitor
Urodynamic Monitor--$2900. Like new. Bard 4-Channel Urodynamic Monitor with extra supplies. I left private practice and joined a large group and no longer need this monitor. It is in great condition and was hardly used. I am in the Santa Rosa area but can arrange delivery to other Bay Area locations. Contact Janet at 650-814-7155 or janetpulskamp@comcast.net.

Medical office space, Santa Rosa
Newly remodeled medical office with exam rooms available for clinician to see patients. Located on North Dutton near West College. Parking, reception area, utilities included. To view, visit www.facebook.com/SantaRosaSportsAndFamilyMedicine. Contact Len at 707-529-8081 or len@srsportsmed.com.

SCMA members get free classifieds!
SCMA members can place free classified ads in *Sonoma Medicine* or *SCMA News Briefs,* our monthly e-newsletter. Cost for nonmember physicians and the general public is $1 per word. To place a classified ad, contact Linda McLaughlin at Linda@scma.org or 707-525-4359.

NEW MEMBERS

Eric Dean, MD, Medical Oncology*, Internal Medicine*, Hematology, 3883 Airway Dr. #220, Santa Rosa 95403, Harvard Med Sch 2005

Charles Emond Jr., DO, Emergency Medicine, 401 Bicentennial Way, Santa Rosa 95403, Kirksville Coll Osteo Med 2003

Jose-Mario Fontanilla, MD, Internal Medicine*, Infectious Disease*, 401 Bicentennial Way, Santa Rosa 95403, Univ Philippines 2001

Mark Alan Friedman, MD, Orthopaedic Surgery*, 555 Petaluma Ave #B, Sebastopol 95472, Univ Chicago 2001

Bruce Heller, MD, Family Medicine*, 2220 Northpoint Pkwy., Santa Rosa 95407, Case Western Reserve Univ 2002

Kristin Murray, MD, Obstetrics & Gynecology*, 401 Bicentennial Way, Santa Rosa 95403, Univ Minnesota 1998

Julie Pearson, MD, Obstetrics & Gynecology*, 401 Bicentennial Way, Santa Rosa 95403, Univ Illinois 1996

Elizabeth Peralta, MD, Surgery, *Surgical Oncology,* 3883 Airway Dr., Santa Rosa 95403, UC Irvine 1992

Tara Scott, MD, Family Medicine*, 3569 Roundbarn Cir. #200, Santa Rosa 95405, Harvard Med Sch 2002

Madhavi Vetsa, MD, Internal Medicine*, Gastroenterology*, 401 Bicentennial Way MOB W 240, Santa Rosa 95403, Osmania Med Coll 2002

* = board certified
italics = special medical interest

May is Garden Tour Time!

Gail Dubinsky, MD

The Art Raffle prize: "Sonoma Mountain Road #4," by Peggy Sebera.

As springtime unfolds in Sonoma County, the hills come alive with green grass and wildflowers, the seasonal progression of blooms unfolds in gardens large and small, and a dedicated group of volunteers works hard behind the scenes to prepare for the oldest continuously running annual garden tour in the North Bay. The SCMA Alliance Foundation Garden Tour, now in its 22nd year, takes place the Friday and Saturday after Mother's Day. This year's tour, set for May 17-18, will feature gardens in Petaluma for the very first time.

Founded in 1929, the SCMA Alliance is an all-volunteer organization of physicians' spouses or partners, and more recently physicians as well. The Alliance has a dual purpose of providing community and social activities for medical families, and of fundraising for the health of Sonoma County.

Dr. Dubinsky, a member of the SCMA Alliance, chairs the 2013 Garden Tour Committee.

The SCMA Alliance Garden Tour was created in 1992 as a way to raise money for the Alliance's Foster Children's Gift Program, now called Give-a-Gift. The first tours were on Fridays, by invitation only to approximately 400 Alliance members and guests, who were served lavosh sandwiches made by hand in members' kitchens. Those tours netted about $4,000 each.

As the years went by, the tours grew in size and scope, opening up to the community at large. In 2003, they became a Friday-Saturday event, with over 1,000 guests in attendance, netting $30,000 for additional Alliance programs (see sidebar). The tours traditionally took place in Santa Rosa, but since 2007 they have highlighted other areas of Sonoma County, including West County, Healdsburg, Sonoma and Windsor.

In order to become a more effective fundraising organization, the Alliance formed the SCMA Alliance Foundation as a 501(c)3 nonprofit corporation in 2003. Since then, the Alliance and Foundation have expanded their fundraising reach to provide grants to community nonprofit organizations that serve the health needs of children, adults and families.

2010 marked the next stage in our evolution, as we began designating a funding directive to focus the awarding of our grants. In successive years the directives have included expanding access to health services, combating childhood obesity, and funding mental health services.

Over the last decade, the garden tour has raised more than $475,000 to promote community health. The 2011 tour, which featured Santa Rosa's McDonald Mansion, netted over $65,000, and the proceeds for last year were $53,000.

SCMA Alliance and Foundation Programs

The SCMA Alliance and Foundation sponsor four programs that serve children and young people in Sonoma County:

Give-a-Gift. In partnership with the Sonoma County Human Services Department, this program provides personalized wrapped holiday gifts for foster children—currently over 500 in the county. Also, in collaboration with the Valley of the Moon Children's Home and VOICES, the program provides laptop computers to former foster youth enrolling in college. All told, the program gave $23,000 in gifts and computers to local children and teenagers during 2012.

Safe Schools. In collaboration with Sonoma County Office of Education, this program provides $1,000 grants to help schools purchase evidence-based curriculum to combat bullying and violence. Ten local schools from elementary to high school level received grants in 2012.

Journey Safe. In partnership with the California Highway Patrol, this program presents high school assemblies for teens and their parents on the hazards of distracted driving, which accounts for 11% of fatal crashes involving drivers under age 20. Almost 65% of all teen passenger deaths occur when another teen is driving. The program reached more than 2,000 local students in 2012.

Health Careers Scholarships. This program provides merit and needs-based scholarships for the next generation of health care professionals. The program's dedicated fundraiser, the Holiday Greeting Card, just celebrated its 50th year. In association with the Community Foundation of Sonoma County and 10,000 Degrees, the program awarded $30,000 to local students in 2012. ◇

For 2013, the Alliance and Foundation are expanding our mental health funding directive to include services for low-income children, adults and seniors. Mental illness has wide-reaching impacts on the community, beyond the suffering of the individual affected. When mental health patients are given tools to cope with depression, anxiety, anger and other mood disorders, in addition to assistance with communication skills, they are more likely to function better in their lives and in their relationships with family, friends and coworkers. Mental health interventions can help break intergenerational cycles of dysfunction. They have a positive effect on the community into the future, and thus represent the ultimate cost-effective and preventive health service.

Since this year's tour will be showcasing Petaluma gardens, three prominent nonprofits serving that community have been selected as beneficiaries: Committee on the Shelterless (COTS), Petaluma People Services, and Hope Counseling. Two nonprofit agencies serving the entire county—Lifeworks and the National Alliance on Mental Illness of Sonoma County—will receive grants this year as well. Monies raised will also support four SCMA Alliance and Foundation programs: Safe Schools, Journey Safe, Health Careers Scholarships, and Give-a-Gift.

Our self-guided garden tours present a wide variety of garden styles and sizes to inspire both serious and recreational garden enthusiasts. We also have many extra features that enhance the experience for attendees. Absolute Statuary of Sebastopol has donated a garden bench as a door prize since 1994, and Master Gardeners are available in one garden to answer any plant-related inquiries. High school and college musicians from medical families perform in another garden in two-hour shifts.

Master Gardener and author Sandy Metzger will return this year to sell and sign her delightful children's gardening books. We always feature an artist painting in one of the gardens. This year it's Petaluman Peggy Sebera, whose beautiful work "Sonoma Mountain Road #4" (shown on previous page) will be the Art Raffle prize. In our popular Wine & Dine raffle, restaurants throughout Sonoma County generously donate gift certificates. The grand prize is a dinner and wine pairing at the Farmhouse Inn, which has supported the garden tour for many years. (You need not be present or even attend the garden tour to win one of the raffles!)

The month of May in Sonoma County is a busy time, and the garden tour takes place close to many other community events, including the Human Race, the Rose Parade, and the Amgen Tour de California. A fun coincidence this year is the Salute to American Graffiti Classic Car Show and Cruise in downtown Petaluma on Saturday, May 18. Come visit the gardens and stay for the cars!

For more information and ticket sales, visit the SCMA Alliance website at www.scmaa.org/garden tour.

We hope to see you in Petaluma! ◇

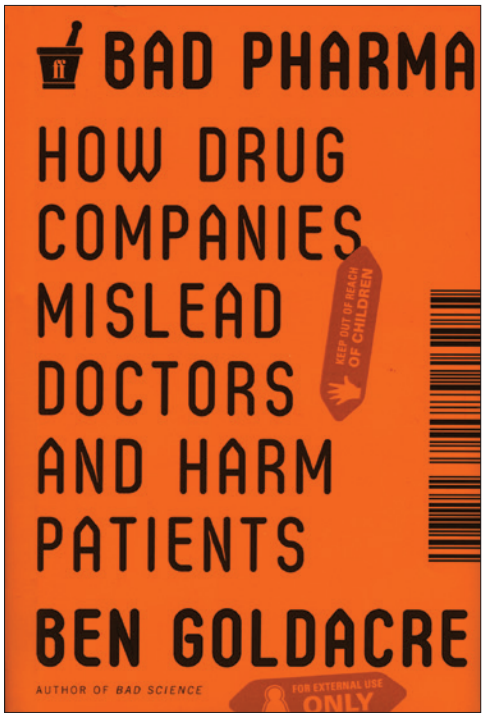
Email: dubinsky@rxyoga.com

For more information on paintings by Peggy Sebera, visit www.peggysebera.com.

Pharmaceutical Critique

Jeff Sugarman, MD

Bad Pharma: How Drug Companies Mislead Doctors and Harm Patients, Ben Goldacre, 448 pages, Faber & Faber (2013).


BAD PHARMA
HOW DRUG COMPANIES MISLEAD DOCTORS AND HARM PATIENTS
KEEP OUT OF REACH OF CHILDREN
BEN GOLDACRE
AUTHOR OF BAD SCIENCE
FOR EXTERNAL USE ONLY

In a prominent *British Medical Journal* article published in 2002, Moynihan et al observed, "There's a lot of money to be made from telling healthy people they're sick. Some forms of medicalizing ordinary life may now be better described as disease mongering: widening the boundaries of treatable illness in order to expand markets for those who sell and deliver treatments. Pharmaceutical companies are actively involved in sponsoring the definition of diseases and promoting them to both prescribers and consumers. The social construction of illness is being replaced by the corporate construction of disease."[1]

Dr. Ben Goldacre explores this issue and many others in his latest book, *Bad Pharma: How Drug Companies Mislead Doctors and Harm Patients*. Trained in medicine at Oxford and London, Goldacre is the author of the bestselling book, *Bad Science* (2008). *Bad Pharma*, his second book, is a well-researched critique of the pharmaceutical industry, loaded with examples supporting each shot he takes at the drug companies, slowly and systematically riddling their claims with so many holes that the reader is left with serious doubts about the legitimacy of the entire pharmaceutical industry.

Dr. Sugarman, a Santa Rosa dermatologist, serves on the SCMA Editorial Board.

In general, *Bad Pharma* confirmed some of my worst fears and exposed some shocking realizations. Goldacre's methods and arguments, however, display some of the same logical flaws as the industrial drug development process that he so ardently abuses.

Bad Pharma first outlines the systematic suppression of negative clinical research data. This practice has indeed been a significant problem in the past, and there are many examples of the drug industry not reporting negative results. In recent years, however, most respected medical journals will not publish a trial that is not first registered on www.clinicaltrials.gov.

Goldacre further details the flaws in clinical research trials. He patiently explains that the pathway for drug approval in the United States requires only comparison to a placebo rather than a known efficacious medication. I could not agree more that this egregious low standard does not facilitate efficient advances in the treatment of important diseases such as hypertension.

As Goldacre points out, drug development is a high-risk enterprise. The average cost for developing a new drug is $300–600 million. Most of this money comes from the drug industry rather than the National Institutes of Health (NIH). This imbalance is likely to become even more skewed as budget cuts and our shrinking federal government further weaken the NIH purse. Goldacre argues that public policy must address this issue because pharmaceutical companies will always choose the path of least resistance. Powerful financial incentives discourage developing new chemical entities and encourage repackaging "me too" products without significant added medical benefits.

Goldacre subsequently links clinical research organizations (CROs) to the commercialism of clinical trials but fails to explain that CROs play an important role in separating the sponsor (the pharmaceutical company) from the raw data and therefore provide a barrier to corrupting and manipulating the data. Goldacre also links CROs with the outsourcing of clinical trials to other countries, stating that "many trials are now being conducted in developing countries." In fact, the FDA requires that a certain percentage of data be

obtained in the United States, thereby preventing trials from being solely conducted in developing countries.

The section on clinical trials offers chilling accounts of pharma's disregard for basic ethics, including an instance in Nigeria in which 11 children died in a meningitis trial and participants were not informed that there was an effective treatment available at the same facility.

I found myself disagreeing with some points in the trials section. Goldacre argues that since drugs are tried out on "ideal" patients, the results may not be generalizable to the larger population. In fact, drugs are often not tested on "ideal" patients, but in many cases on poorer patients with comorbidities. These subjects often have more medical problems than the "average" real-world patient. Additionally, Goldacre faults the trials system by pointing out that many studies ignore drop-outs. In my experience, I have never known this to be true. For statistical analysis, all the trials I have examined use the "intent-to-treat" (ITT) pool, which includes all those who entered the trial, including those who drop out.

Goldacre concludes with a very depressing chapter on deceptive marketing practices. Like the other sections of the book, this one has a set of prescriptions for the ailments described. Goldacre is to be applauded for suggesting solutions and not just cataloging problems.

Ultimately, it's not difficult to find an example of a pharmaceutical industry project that is flawed or misleading in some way. What's missing in *Bad Pharma* is an attempt to quantify the magnitude of the problem. What if one in a hundred clinical trials do not register on clinicaltrials.gov, or one in a thousand do not analyze the ITT population, or if 20% of the phase 3 trials are not performed in the United States? Do we lose faith in all our therapeutics? While there are many real examples of pharma sloppiness or malfeasance, the true magnitude of the problem may be overstated by Goldacre.

Beyond the individual parts, this book exposes a perversion of science and medicine that has obvious implications for the health of our society. There have been many egregious acts performed on research subjects over the centuries, including the not-so-distant Tuskegee syphilis studies. Unfortunately, it takes discovery and public outrage to move the field to safer ground and more ethical behavior. As an important work of investigative journalism, *Bad Pharma* may ultimately lead to safer practices, more transparency, better science and more meaningful therapeutics in an industry whose health is essential to all of ours. ◇

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Reference

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CMA WEBINARS

Are you living the vision?

CMA hosts free webinars on strategic planning and time management

You have probably heard of strategic planning, and maybe have even worked with a consultant or have someone in your organization responsible for your strategic plan. But do you wake up each day and have a clear vision of where you're headed? If you do, congratulations! You're among the few. If not, now is the time to bring it into focus.

Strategic planning is an essential function for every successful business and even for us as individuals, yet is it one of the most dreaded or delayed activities of most organizations. One of the biggest problems keeping us from achieving our goals is how we convince ourselves that being busy with the urgent is more important than finding time to bring our desired future into focus. It is not.

Every single person on earth has 24 hours in a day, so how is it that some people accomplish much more than others? Sure, you can say it's their wealth, intellect or power, but those are excuses. People who have those things have them because of something we all have access to—how we choose to spend our time.

When people and organizations take a little time to get clear about what they want and why that vision is so compelling, the organizational culture changes and daily decisions and choices about how to use your time become easier. The choices may still be difficult and changing habits may take time, but you will at a visceral level know what is more important.

Make 2013 the year when you bring the vision of your future into focus. Have you wanted to hire a consultant to help you develop a strategic plan, but couldn't justify the expense? If you would like to explore a solution that is simple and free, the California Medical Association is offering two webinars this year on self-directed strategic planning and time management as part of its practice management webinar series. These sessions are interactive, and you'll come away with strategies and tips that you can use immediately to help you set your vision and provide the tools to help you achieve it.

If you miss the original broadcast, you can view the webinar later on demand.

Strategic Planning from Vision to Action—A Self-Guided Process (April 3, 12:15 to 1:15 p.m.)

Time Management—How to Quickly Make Decisions on What Matters Most (May 8, 12:15 to 1:15 p.m.)

The webinars will be presented by Rachel Doherty Smith, President and CEO of Smith Performance Solutions. For more information, or to register, visit www.cmanet.org/webinars.

CMA Sets Agenda for 2013

California Medical Association

For more than 150 years, the California Medical Association (CMA) has fought on the frontlines of nearly every major policy, political, budgetary, societal and legal campaign affecting the state's physicians. The shared challenges facing physicians are more formidable today than ever.

As California and the rest of the nation faces a time of unique budgetary challenges and monumental change in health care, it is more critical than ever before that physicians come together with a unified voice to advocate for the profession and for the health and well-being of the patients we serve.

In January 2013, the CMA Board of Trustees adopted five distinct goals for the association this year. Below are details of each of those goals.

Grow Membership by 5%

CMA member physicians are our most valuable asset. Without your dues dollars, CMA wouldn't be able to do its vital work protecting the practice of medicine and ensuring access to quality medical care for all Californians.

Over the past two decades, organized medicine nationwide has seen a gradual decline in membership, and CMA was no different. In 2011 and 2012, however, we reversed that trend, reaching a 20-year membership high of more than 37,000 members last year.

CMA made a significant investment in membership development in 2012, increasing data analysis and ramping up recruitment and retention efforts. These efforts, along with focused recruitment achievements in select counties, resulted in a net growth of over 2% for the year. It may not sound like a lot, but after years of slow decline, 2% growth is a significant and laudable achievement.

Our goal for 2013 is to continue the forward momentum and grow membership by 5% by year's end. Increased recruitment activities in 2013 will focus on "pilot projects" with select partner counties.

Commitment to Public Health

CMA has a rich history and legacy of demonstrating its commitment to public health. CMA has incorporated key public health legislation in its legislative agenda every session and has maintained a high profile on public health issues. Advancing reforms in order to benefit our patients and the public has always been a priority for the association, and continues to be at the top of our list.

In 2013, CMA will be working proactively with public health leaders to track emerging trends and to strategize solutions for continuing challenges.

We will continue to include legislation focusing on public health in the legislative agenda this year. CMA is also exploring new ways of demonstrating its commitment to public health, including providing educational briefings to legislators on public health matters and participating in health fair-type events.

Prosperity for All Physicians

At no time perhaps since the creation of Medicare has the health care delivery system seen such dramatic and rapid changes. The transformation of health care in California is largely being

driven by three major developments:

- The rise of large medical groups, integrated delivery systems and advanced analytics, health information technology and population health management.
- Health care reform-related policy changes at the federal and state levels that emphasize care coordination, accountability and paying for "value"—efficient, high quality care.
- Purchasers—private insurers in California and the nascent Covered California Health Benefit Exchange—are making it very clear that physicians and hospitals need to control costs or risk being isolated or frozen out of increasingly narrower network products.

These trends will likely accelerate as cost pressures grow, and health reform and other private sector initiatives continue to ramp up in 2013 and beyond. These powerful forces pose particular challenges and opportunities for independent physicians and medical groups interested in maintaining a degree of autonomy while market and policy forces are driving the industry towards hospital-led systems. At the end of the day, the system benefits from a diverse set of providers competing to deliver high-quality, high-value care.

Over the next year, CMA will be working feverishly to help physicians in all modes of practice to not only thrive in the rapidly changing health care marketplace, but to lead the charge towards new patient-centric, physician-led models of care.

One of the biggest challenges for physicians now and in the future is access to capital to invest in their own practices so that they can expand into different markets, adopt new technologies and care models, and maximize reimbursement. Without capital for necessary infrastructure, physicians are unable to implement systems to help them remain competitive and independent. In contrast, hospital systems and health plans are at a strategic advantage.

CMA staff are developing three distinct proposals that represent "game-changing" strategies in support of prosperity for all physicians: 1) Study and design physician-led health care delivery models and create a CMA-sponsored backbone for independent physicians and medical groups; 2) Develop and implement a quality initiative for independent practices with the goal of reducing clinical variation; and 3) Increase physician access to financial capital.

Stay tuned for additional details as these proposed initiatives evolve over the coming months.

Defend MICRA

The trial attorneys have sought to modify or eliminate California's Medical Injury Compensation Reform Act (MICRA) protections since the state's landmark medical malpractice insurance reforms were established in 1975.

Under MICRA, injured patients are fairly compensated, medical liability rates are kept in check, and physicians and clinics can remain in practice treating patients. MICRA has no limits on the economic damages (medical costs and lost wages) that can be recovered by injured patients. Injured patients also can sue for unlimited punitive damages and recover up to $250,000 in non-economic damages (pain and suffering). In addition, MICRA includes a sliding pay scale, which ensures that more money goes to patients, not lawyers. The $250,000 cap on non-economic damages has proven to be an effective way of limiting meritless lawsuits, but the cap has been targeted by the trial lawyers because it restricts the amount of money they can collect in damage awards.

For more than 40 years, CMA has defended this important law in the legislature, in the courts and in the court of public opinion. We have been successful primarily due to vigilance and allocation of sufficient resources on all fronts. This year will be no different.

Several factors make 2013 a decisive year for defending MICRA. Both houses of the legislature contain Democratic super-majorities, traditional allies of the trial attorneys. Also, nearly half of the members of the Assembly are newly elected without a voting history. Attorneys are utilizing new and creative arguments to challenge long-standing constitutional approval of MICRA and to move public opinion. They are attempting to use heart-wrenching horror stories placed with compliant media outlets in order to defeat MICRA.

CMA in 2013 will focus on educating new members of the Legislature on the importance of MICRA for their constituents and the role MICRA plays in patient protection and access to care. CMA's government relations team will also be ready to jump into action at a moment's notice should the trial attorneys try and utilize a late "gut and amend" to push an anti-MICRA bill through the Legislature, as they did at the end of last session.

As always, CMA's political action committee (CALPAC) will remain involved in the fight, amassing the financial resources that will be needed should a costly MICRA challenge emerge this session. CMA's legal team also continues to aggressively monitor court activity and seek out opportunities to provide guidance to courts when they are asked by plaintiff attorneys to weaken or eliminate MICRA.

Lead Change in Health Care Reform

In 2010, Congress passed the Patient Protection and Affordable Care Act (ACA), which reformed the for-profit health insurance industry and beginning in 2014 will provide health insurance to most of the nation's uninsured. The ACA also formed the CMS Innovation Center to fund myriad pilot

programs to test new health care delivery and payment models.

Under the ACA, two-thirds of California's uninsured will be covered by private insurance through a health insurance exchange purchasing pool. The remaining uninsured will be covered through a massive expansion of the Medicaid program.

CMA in 2013 will continue to monitor implementation of the ACA in California, ensuring that health care reform works for physicians and their patients. Specifically, CMA will remain engaged as Covered California, the state's health benefit exchange, prepares to open for business. The exchange's goal is to start pre-enrollment in October 2013. Critical federal regulations and guidance, however, still must be finalized and released.

Among the critical issues still needing to be hammered out before the exchange opens for business are: the state's plan for monitoring and enforcing network adequacy requirements; the reconciliation of major discrepancies between state and federal grace-period guidelines for premium nonpayment; and how exchange plans will handle the subject of out-of-network benefits.

While the pre-enrollment date is only months away, exchange leadership has yet to select which plans will offer products on the new marketplace, meaning that benefit design, contracting and enrollment policies will need to be developed at a breakneck pace.

CMA will also be working to make sure that physicians understand the implication of contracting with exchange plans and to ensure that doing so places minimal administrative burdens on physicians.

Together We Are Stronger

The shared challenges facing those who practice medicine may never have been more formidable than today. In this uniquely turbulent political and fiscal environment, we have redoubled our efforts to provide the support and services physicians need to be able to focus on their jobs and bring good health and happiness to the lives of millions of Californians.

Changes are coming—and CMA is poised and ready to meet the demands of the future. ◇

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Act now to avoid Medicare penalties in 2015

Over the past six years, the Centers for Medicare and Medicaid Services (CMS) has launched a number of initiatives that offer physicians the opportunity to increase their net revenue by participating in quality reporting programs. Until now, these programs have been voluntary, and physicians have received bonuses for participating. That's about to change. Failure to participate now means physicians could face significant penalties.

The American Academy of Family Physicians estimates that participating in these initiatives in 2013, rather than waiting until 2014, could save a physician $19,000 in avoided penalties.

To help physicians understand the bonuses and penalties associated with key Medicare initiatives, the California Medical Association (CMA) recently hosted a webinar for members, *Quality Reporting Programs: What Physicians Need to Know and Do Now to Improve Care and Avoid Penalties.* **The webinar is now available for on-demand viewing in the CMA resource library at www.cmanet.org/webinars.**

During the webinar, CMS Region 9 Chief Medical Officer Betsy L. Thompson, MD discusses the major quality reporting and e-health incentive programs currently underway for eligible professionals. The session covers the basics of the Physician Quality Reporting System, the Medicare and Medicaid Electronic Health Records Incentive Programs, the Medicare E-Prescribing Incentive Program and the new value-based payment modifier. The content is geared toward physicians, nurse practitioners and physician assistants and what they need to know, although other health care professionals and medical office staff may find the information useful as well.

If you are not already familiar with each of these programs, the time to learn about them is now.

Below is a brief summary of the programs and key dates that are discussed in the CMA webinar.

Meaningful Use

Meaningful use is the set of criteria on which physicians must report in order to receive federal incentive payments for EHR adoption under the Medicare and Medicaid Electronic Health Records (EHR) Incentive Programs. Meaningful use is also the necessary foundation for all impending payment changes involving patient-centered medical homes, accountable care organizations, bundled payments and value-based purchasing.

Bonuses. For the Medicare EHR incentive program, your cumulative payment amount depends on the first year of participation. Physicians who start participating in 2013 can receive up to $39,000; physicians who start in 2014, up to $24,000. The last year to begin participation in the Medicare EHR incentive program is 2014. For the Medicaid (Medi-Cal) incentive program, physicians can receive up to $63,750.

Penalties. Physicians who do not demonstrate meaningful use by 2015 will be subject to Medicare payment penalties. These reductions increase from 1–2% of total Medicare charges in 2015, to 2% in 2016 and 3–5% in 2017 and beyond. Medicaid rates will not be adjusted for failure to achieve meaningful use.

Electronic Prescribing

Medicare's e-prescribing program provides incentive payments for physicians who e-prescribe and payment penalties for physicians who do not.

Bonuses. This year is the last year to receive a bonus for e-prescribing. To qualify for the 0.5% bonus in 2013, you must have successfully reported e-prescribing activity for at least 25 patient visits between January 1 and December 31, 2012.

Penalties. Starting in 2012, physicians who did not electronically transmit their prescriptions became subject to payment penalties on all Medicare allowed charges. The penalty in 2013 is 1.5%, and in 2014, 2%.

Physician Quality Reporting

The Physician Quality Reporting System (PQRS) is a voluntary quality reporting program that provides incentive payments to eligible professionals who report data on quality measures for services provided to Medicare beneficiaries.

Bonuses. Physicians must report on three individual measures or one measures group to receive a 0.5% bonus. Physicians participating in a maintenance-of-certification program are eligible for an extra 0.5% bonus, for a total bonus of 1%.

Penalties. The Affordable Care Act calls for PQRS payment penalties starting in 2015. In the 2012 Medicare Physician Fee Schedule, CMS announced that 2015 program penalties will be based on 2013 performance. Therefore, physicians who do not successfully report on at least one individual measure in 2013 or elect to participate in the administrative claims reporting option will receive a 1.5% payment penalty in 2015. The penalty goes up to 2% in 2016 and beyond.

Value-Based Payment Modifier

The value-based payment modifier was mandated by Congress under the Affordable Care Act. It will adjust physician payment based on the quality and cost of the care they provide. It will take effect in 2015 using 2013 data for groups of 100 or more physicians. By 2017, this modifier will be implemented for all physicians.

Bonuses. Participating physicians may receive bonuses based on their quality and cost scores.

Penalties. Participating physicians may be penalized up to 1% based on their quality and cost scores. Physicians who choose not to participate will be docked 1%.

Each of these programs has specific deadlines and reporting requirements, some of which are overlapping, and are not always simple to understand. CMA's webinar gives physicians the information they need to successfully participate in each program. During the webinar, Dr. Thompson helps participants understand which programs they are eligible for, the associated incentives and penalties for each program, and the deadlines and requirements for participation.

The on-demand webinar (Quality Reporting Programs) is available free to CMA members at www.cmanet.org/webinars. Nonmembers can purchase the webinar for $99.

For more information, contact CMA's member service center at 800-786-4262 or memberservice@cmanet.org. ◇

Frosted buffalo. *Photo by Ted Hard.*

Culture Will Eat Strategy for Lunch

Walt Mills, MD

Culture will eat strategy for lunch, but culture without strategy is aimless." So said a wise local healthcare leader at a presentation I recently attended. I was hypersensitive to this statement because the SCMA Board of Directors has spent the past six months gathering information from other community leaders and our physicians to prepare a new five-year strategic plan. What if our culture as a physician community does trump strategy? Is it a waste of time for the two dozen doctors volunteering hundreds of hours collectively to fashion a strategic plan for our medical society if our future is predetermined by our culture?

Starting last December, we mailed the SCMA Strategic Planning Survey to more than 1,000 local physicians and healthcare leaders. Nearly 200 returned the survey, giving us precious insight for our planning. The top three themes of what SCMA should focus on were "improve community health, implement healthcare reform, and improve physician wellness." The top three recommendations on how SCMA should address these areas were "community partnerships, focus on doctor-patient relationship, and promote physician unity." As promised, there was also a raffle for the respondents—and Dr. David Lightfoot won the iPad!

Dr. Mills, a Santa Rosa family physician, is president of SCMA.

On the same day I heard the warning about the power of culture over strategy, I attended a CEO roundtable to get advice on our strategic planning. Our facilitator asked the CEOs, "If you had access to all the SCMA physicians, what could they do for you to improve the health of our community?" It struck me just how powerfully our physician community, together, might effect change. The CEOs chose "obesity" as a target, and the rest of the session was about developing a plan to decrease the obesity epidemic. A dozen SCMA board members participated. At the end, an entire wall of flipchart papers listed measurable steps to achieve the goal. I left thinking that the plan actually seemed real and possible.

Between now and our next public meeting on May 9, the SCMA board will be clarifying our five-year strategic plan. Knowing the passion and ingenuity of the doctors on our board, coupled with the talents of our committed staff, I'm certain we'll arrive at a bold, relevant plan that will serve as our roadmap to 2017.

So we'll have a plan to share with you at our annual Wine & Cheese Reception on May 9. CMA President Dr. Paul Phinney will be joining us, sharing his inspirations and aspirations for the future of organized medicine. My question is, what will we tell Dr. Phinney about our culture?

Stories tell a lot about culture, and I will tell Dr. Phinney tales of our past 150 plus years as one of the most amazing medical communities in the world. I'll tell him about our recent experience of rallying to support water fluoridation efforts. I've been amazed by the physicians who took time out of their busy schedules to show up at the Board of Supervisors and voice support for this important public health issue.

I'll tell Dr. Phinney about the past five years at SCMA—our efforts to increase specialty access for our safety net patients; our support for the Santa Rosa Family Medicine Residency when its future was in doubt; our engagement in bringing medical students to our community; our collaboration with local community health clinics; our support for the Future of Primary Care Conference.

These and many more stories reveal our culture—what we, the physicians of Sonoma County, consider important. I'll tell Dr. Phinney of our taboos: that our spoken and unspoken rules of behavior always put our patients first. I've seen it over and over again. When our doctors are down, they rally around what is right for their patients—in advocacy, in challenging the status quo. I'll point out that our annual Awards Dinner recognizes inspiring contributions by our physicians and reveals what we respect and treasure about our medical community.

If indeed, culture will eat strategy for lunch, then I am comforted that even if we don't get our new strategic plan quite right, it will be used by SCMA to do good, just as we always have. After all, our strategy will change, but our essence—our culture—is grounded in a long heritage of physicians coming together to do the right thing. This culture must endure. ◇

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